ACCS

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MODERN TRANSPORT

"THE TIMES" OF THE TRANSPORT WORLD

NEW SIGNALLING AT AMERSHAM

See Page 16

VOL. LXXXIII No. 2138 [Registered at the G.P.O. as a newspaper] LONDON, MAY 7, 1960 PRICE ONE SHILLING

CURRENT TOPICS

Ministerial Ebullience

A FEATURE of the Institute of Transport Congress last week was the oscillating oratory of the Minister of Transport. In performing the opening ceremony Mr. Marples revealed how in spite of opposition he manages to get things done. Apparently the best way of overcoming the delay and red tape sometimes necessarily encountered in Government departments is to commit oneself at public dinners; the resultant publicity impels action as sure as night follows day, not without some embarrassment to those responsible for implementing Ministerial decisions. Dining at the Dorchester as the Institute's principal guest, and responding to the appropriate and witty urbanities of the president, Mr. Reginald Grout, the Minister, as befitting a "ladies' night," studiously refrained from "shop." There was indeed a Rabelaisian touch in his reminiscences, particularly when he explained why he returned to school after running away from home to enter the Liverpool offices of Escombe McGrath under the tutelage of Captain Bacon, one-time chairman of the Manchester Ship Canal Company. Mr. Marples seems obsessed with the possibilities of the Hovercraft. Speaking on the opening day about a recent trip he had made on board the SRN 1, he said: "It may well be that the railways of the future in this country will have an entirely new look about them if this invention really proves to be what it looks like at the moment. This is not a flight of fancy; when a vehicle can cross the Channel it has started its infancy." He was hardly likely to find support at the Europe House meeting, where Sir Ivone Kirkpatrick elaborated the Channel Tunnel scheme and dealt amiably, if somewhat vaguely, with a number of pointed questions, but it is significant that at a later session of the Institute Congress a leading exponent of aviation emerged as a Tunnel supporter.

Channel Tunnel Advocate

IN reply to a point made in discussing his paper, of which a summary appeared last week, Mr. Peter Masefield, president of the Royal Aeronautical Society, said Hovercraft would not be sufficiently developed in the next four years to act as replacements for the present cross-Channel car ferry aircraft. Snags were rocking in rough seas and the spray problem which made it fly blind. The real answer was a further development of the air ferry aircraft and also the Channel Tunnel. The latter would afford one of those real advances in transport amenities which are never wasted. Air transport would continue to provide a faster service at a higher cost; there was still room for the Channel Tunnel even with helicopter and Hovercraft developments in mind. A letter from Mr. J. R. C. Moore in the *Daily Telegraph* expressed similar sentiments, but with tart reflections on national enterprise. "It is tragic if typical," he wrote, "that for seven years no one in Britain would entertain Mr. Cockerell's simple but brilliant new vehicle. It is tragic if typical that within a year of publication America had far outpaced us in developing our own invention. But apart from the clear moral that it is time we woke up, what impact has this on the tunnel? With or without Hovercraft our contact with the Continent remains at the mercy and inconvenience, if not dangers, of gale and fog. What single factor could compare with double off-loading and reloading of goods, packing for shipment costs, dockside delays, etc., in crippling our chances in the Common Market? How much foreign tourist trade is lost by fear of sea travel? And why do so few brave the Channel in winter? The case for a fixed facility immune from the vagaries of storm and season, operating at definite times in direct connection with the main-line system, is not only as great as ever, but of growing basic importance. We still need orthodox shipping. We shall undoubtedly need Hovercraft. But on such a short, important and potentially very busy route they can never be an efficient substitute for an easy, cheap, convenient basic service." Finally, he compared the cost of the tunnel with the loss on a missile project that failed.

Last of Steam on C.N.R.

MORE than 750 railway fans, retired employees and officials of the Canadian National Railways assembled in Winnipeg last week to witness the turn of a page in railway history, for with the arrival of steam locomotive 6043 hauling C.N.R. train No. 76, the era of the steam locomotive on that system was at an end. Mr. J. R. McMillan, vice-president of the C.N.R. Western region, said it was a day of pride mixed with nostalgic sadness. "After ten years of careful planning, we now have completed our coast-to-coast dieselisation programme. To have done this, however, means parting company with a faithful servant that has contributed greatly to the welfare of every Canadian. I refer, of course, to the steam locomotive — that thundering, glamorous giant of the road whose remarkable record of service will never be forgotten. For 124 years — since 1836 — through the strength and power of steam, the country has expanded from small settlements to a thriving network of cities extending from the Atlantic to the Pacific." Locomotive No. 6043 is a 4-8-2, built in 1929 by the Canadian Locomotive Company at Kingston, Ontario. The Premier of Manitoba, Mr. Duff Roblin, took over the controls of the engine to drive it to the roundhouse for the last time. The C.N.R. now has in service 2,144 diesel locomotives and 28 railiners.

A Double Opening

CLOSED-CIRCUIT television was put to a new use on the afternoon of April 28 when the Paymaster General, Lord Mills, opened simultaneously with its aid the demonstration centre of International Computers and Tabulators, Limited, 138, Piccadilly, W.1, and the new computer centre four miles away at Putney Bridge House, S.W.6. Lord Mills performed the double opening ceremony from Hamilton House and was assisted at Putney Bridge House by the Mayor of Fulham, Councillor W. J. Bolton, who started one of the computers installed there. Hamilton House in Piccadilly is part of a building originally built in the time of Cromwell, and is entirely devoted to punched-card machines. For the first time since the formation of I.C.T. there are displayed under one roof its range of punched-card equipment, which extends from small punched card equipment suitable for a business employing as few as a dozen people to high speed electronic calculators (virtually small computers) versatile enough to carry out mathematical calculations for scientists at Harwell or payroll calculations for the National Coal Board. The conspicuously modern architecture of Putney Bridge House is most appropriate to the building's role as the I.C.T. computer centre; it is a six storey building and contains 34,000 sq. ft. of office space. It houses not only computers but also the I.C.T. computer group with experience of the uses to which computers can be put and of their installation and operation. Two main sections of the computer group are the applications department and the central programming service. The applications department is staffed by the system analysts who determine whether a computer can help in the solution of a problem and, if it can, help to devise a system or method of fitting computer operation in the organisation. The programmers translate the problem into machine language.

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Closer Links with Staff

THERE is no complacency on the Western Region of British Railways regarding the conveyance to the staff at all levels of every available piece of information about the aims of management. With this particularly in mind the region has recently extended its internal publicity activities by producing a series of five quarterly publications for the staff. There is a separate issue catering for the staff of all departments within each of the four new traffic divisions—London, Western, Midlands and Welsh, and one for Swindon, where, with the main locomotive, carriage and wagon works, there is a considerable concentration of staff. Hitherto, the Western Region staff magazine has interpreted the outlines of modernisation schemes and other important policy projects, but limited space has meant that they could only be treated in a broad sense. In the new divisional publications the wider subjects are being given localised treatment and colour so that the individual employee, everywhere in the region, can be adequately informed and kept in the picture, with particular regard to occurrences and future developments in his own area. Social matters are also being covered in these divisional news issues which, edited locally, are able to strike a more personal note than could be attained of a centrally produced magazine. The regional magazine continues to be issued each month.

Eastern Region Looks into the Future

RECENTLY the Eastern Region of British Railways gave the first details of the new electric train services, due later this year, on the Chingford, Hertford East, Bishops Stortford and Enfield Town lines. The new timetable will show an all-round improvement in train services with substantial cuts in journey times. At Lower Edmonton, for example, the existing service to Liverpool Street will be increased from two trains an hour in offpeak periods to an average of eight an hour throughout the day. Furthermore, nonstop trains to London from this station will cut the present 34-min. journey to 15, while fast trains from Chingford to Liverpool Street will take 23 min. instead of 35. As already foreshadowed the electrification programme will involve reopening for regular passenger traffic—after 40 years—of the former Churchbury Loop now renamed the Southbury Line, with three newly renovated stations along the route: Southbury (formerly Churchbury), Turkey Street (Forty Hill) and Theobalds Grove. With the introduction of the new services, all electric trains from Bishops Stortford and Hertford East will travel over the Southbury Line to Liverpool Street, calling also at Lower Edmonton. The peak-hour service on the non-electrified Lea Valley Line will be three diesel trains an hour between Broxbourne and Liverpool Street. In off-peak periods an hourly service will run between Cheshunt and Liverpool Street. In addition, there will be certain diesel trains running between Cheshunt and Stratford and the nonstop trains between Bishops Stortford and Liverpool Street will all be diesel-hauled. Diesel main-line trains between Liverpool Street and Cambridge will run approximately every 20 minutes during peak periods, making a first stop at Bishops Stortford.

Pull for the Shore

ADMITTING frankly that it is a development which has come late in the day, a number of lifesaving equipment manufacturers has formed the Lifesaving Appliance Manufacturers Association. It is intended to act as a representative body to act in the general interests of such manufacturers in putting forward their views and to gain public interest in their work. One of the aims of the organisation will be to promote publicity to bring to the notice of shipowners and the general public the importance of lifeboats and other lifesaving equipment at sea. Much of the initiative for this move is attributable to Mr. John West, the naval architect, who has recently been prominent in connection with *Canberra*, the new P. and O. liner. The association obviously has considerable possibilities although it will patently have to do some vigorous recruiting if it is not to present a somewhat ill-ballasted appearance. Liferaft manufacturers, for example, are rather conspicuous by their absence.

Making Large Crankshafts

ENTITLED *Doxford Crankshafts*, a 16-mm. sound and colour film made by the English Steel Corporation film unit in collaboration with William Doxford and Sons (Engineers), Limited, originally for use by the latter firm's managing director, Mr. R. Atkinson, to illustrate a series of papers he is giving to meetings of marine engineers, is now available on loan to recognised applicants (Publicity Manager, English Steel Corporation, Limited, River Don Works, Sheffield, 9). After opening with a brief record of the growth of William Doxford and Sons since it was founded in 1840, the film shows the first Doxford oil engine using the new principle of opposed pistons, which was completed in 1914. The E.S.C. company, Darlington Forge, Limited, made the crankshaft for the first Doxford multi-cylinder engine and the film shows E.S.C. parts produced for present-day engines, which are made in sizes to suit ships ranging from trawlers to large passenger vessels, including forged-steel piston heads, piston rods, connecting rods and components for the built-up crankshaft. One of the most complicated parts of the crankshaft is the piece which incorporates in a single forging a journal, two side webs and two side crank pins, which in the case of a six-cylinder engine would be set at 120 deg. to each other. The stages of manufacture of this 120-deg. journal, as it is called, are followed from the casting of the ingot through the various stages of forging and heat treatment to rough machining, partly at the works of the English Steel Forge and Engineering Corporation in Sheffield, and partly at the works of the Darlington Forge. After the steelworks sequences, the film moves to the Sunderland works of William Doxford and Sons, where all component parts for the crankshaft are finish machined and assembled. *Doxford Crankshafts* dramatically portrays the craftsmanship involved in the production of these massive units.

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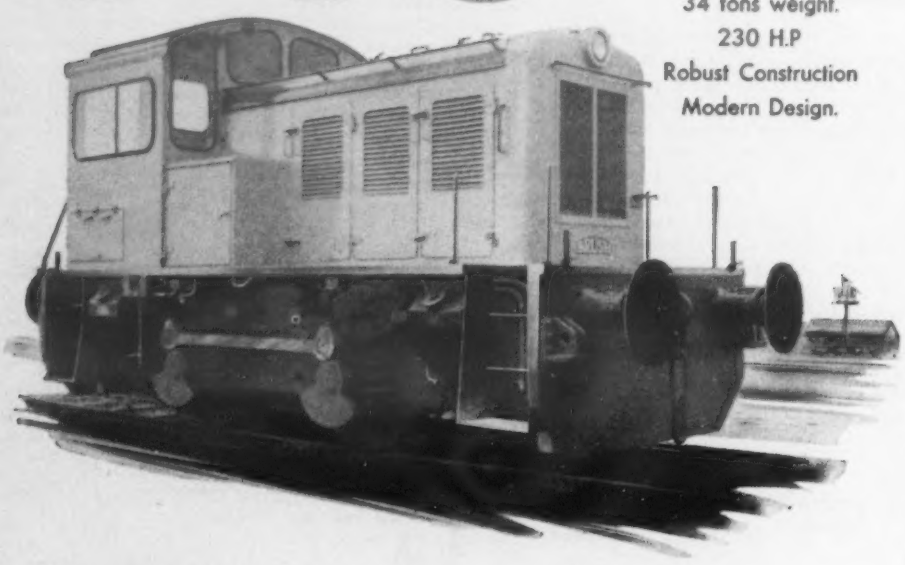
Modern Design.



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The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate.

A Successful Congress

LOOKING back at last week's Institute of Transport Congress in London under the presidency of Mr. R. G. Grout, it will be seen as a worthy celebration of a 40th anniversary—a feast of discussion, a round of social activity and a galaxy of enjoyable and instructive technical visits, all testifying to the organisational achievements of the secretariat. At the opening by the Minister of Transport he expressed a belief in the need to endeavour, in planning for the future, to take account of coming changes. This is something of a counsel of perfection, since, perhaps fortunately, it is not given to man to penetrate the future in detail. Mr. Marples, however, is trying to assess the extent to which personal transport on roads will replace the mass transport media and what impact the Hovercraft, when developed, may have on internal transport. He referred to the difficult period of modernisation while keeping services going experienced by the railways, which we could not do without in this densely populated island. While paying his respects to the British Transport Commission, whose difficulties he recognised, he asked what sort of railway system would one set out if starting from scratch today? But that had to be modified by knowledge of what we already possessed. The advisory group was working hard and hoped to provide a viable system which would not be too great a burden on the taxpayer. As to the motor car, in London public transport catered for 94 per cent of the commuters and the private car for only 6 per cent. "Think of the chaos if the proportions were reversed," he commented. Los Angeles was the only city in the world built for the motor car and there two-thirds of the central area was devoted to garages and parking lots—a state of affairs it was now sought to alter. He pleaded for a more sensible use of cars at weekends and holidays and for staggering of working hours. A through pattern of traffic in London could only be obtained by some centralisation of traffic authority—hence provisions in current legislation.

The Obstacle Race

IN introducing his paper (summarised in our April 30 issue) Sir Gilmour Jenkins suggested it was inevitable that economic and financial handicaps should be placed on transport by governments because of the enormous importance of transport to the economy of any state. One could have a transport system planned as a service only, but in fact every transport undertaking had to pay its way as a whole while there were sections of it which could not sustain themselves individually. The Press and public were misled into thinking that the paper losses of transport were due to the ordinary forces of economic competition, but the transport concerns were not running a flat race, not even a handicap, but an obstacle race in which the obstacles were altered from time to time. On top of that there were checks and balances introduced for the protection of the customer and also those for the protection of one transport enterprise from another. Sir Brian Robertson, who had originally intended to present a paper to the congress, offered both personal thanks and warm congratulations to Sir Gilmour and underlined the fact that there was no such thing as completely free competition in transport. That did not mean that there should not be some enlivening rivalry, on the analogy of the good work performed by the fleas on the dog.

Cross-Subsidisation Attacked

SUBSEQUENT discussions ranged over a very wide field, except that by some chance there were few direct references to haulage, despite many to the transport activities of traders. On Sir Gilmour's paper it narrowly succeeded in avoiding getting bogged down on the enticing subject of whether area agreement bus companies should indulge in so much cross-subsidisation to maintain little-used rural services; one suggestion was that many of them could be abandoned ruthlessly, but Sir Gilmour pleaded the position of those who had no car for one reason or other. The use of one-man buses to reduce costs and their success in certain town services was a further topic, while the pros and cons of free urban transport were ventilated, the savings of conductors' wages being balanced against the fact that not everybody uses local public municipal transport and the difficulties of extracting necessary finance from the municipal coffers. Sir Gilmour also referred to the situation in which public freight transport might disappear before the onslaught of ancillary users, in which case the trader without a van of his own would be in an unenviable position. For traders it was urged that what was wanted was a flexible system of public transport which could adapt itself to changing circumstances.

Shipping Subsidies to Air Safety

THAT the legislature in Britain had been positively friendly to railways compared with the anti-trust laws of the United States was one of Sir Gilmour's points in reply to a speaker's reference to unfair Parliamentary treatment of the railways. But Sir Donald Anderson, in his paper and the thrust-and-parry which followed, showed how laissez-faire on shipping here was paralleled by subsidies and favourable discrimination in many other countries, including the U.S.A., where there was a building subsidy, an operating subsidy and an opportunity to sell back the ships at the end of their life, sometimes at higher prices. This was directly contrary to what Americans preached about trading in other industries in other parts of the world. The shipping conferences had been declared illegal in the U.S.A., under anti-trust legislation, but a stay of execution had been granted, leaving a state of most dreadful confusion, as it had also been agreed that freight conferences were useful. Before describing this feat of riding two horses going in utterly different directions, Sir Donald had illustrated the evils of flag discrimination in India, where the shipbuilding industry built ships at greater cost than they could have been bought from overseas. Was it right to spend men and materials on shipbuilding which could not be carried out economically rather than on some industry at which the country could excel? Discussion on Mr. Peter Masefield's paper (see also page 1) ran from the economic place of the aircraft to its safety. The author of the paper roundly defended the safety record of airlines and stated that one was eight times safer on a U.S. domestic airline than in a New York taxi. Nevertheless, as an air operator put it, there was need for intensive training of air crews, with frequent checks on their capabilities; any incident, however minor, was probed in case it yielded lessons for general adoption; thirdly, the engineering and traffic branches of the British air corporations were constantly reminded that although air transport was not inherently dangerous, it was less forgiving if an error did take place. Altogether a stimulating congress.

NEWS SUMMARY

THE proposal of the British Transport Commission to build a large block of offices at Waterloo on the York Road frontage has been vetoed by the Minister of Housing. (See page 8).

Much new equipment is on show at the Mechanical Handling Exhibition which continues at Earls Court until May 13. (See page 5).

Details have now been announced of the forward-entrance version of the A.E.C.-Park Royal Bridgemaster. (See page 7).

The first of the G.E.C. 50-cycle electric locomotives for British Railways has been delivered and was on show last week at Marylebone. (See page 3).

Much improved preliminary results for 1959-60 have been announced by the British Overseas Airways Corporation. The operations of the corporation itself showed a profit after meeting interest charges. (See page 9).

The first of four de Havilland Comet 4Bs on order for Olympic Airways was flown in a record time from London Airport to Athens on April 30. This should enable the airline to commence its Comet services, as planned, on May 18. A second 4B is due for delivery this month.

Road improvement schemes for which grants have been announced by the Ministry of Transport include one for the first two miles of the Rotherham by-pass. Designed to reduce traffic congestion in the centre of Sheffield this section will extend from Handsworth Road westwards to a junction with Manor Lane. Another plan provides for a four-lane carriageway in Wandsworth Road from Lansdowne Way to the Nine Elms Lane railway bridge and yet another for widening the bridge over the L.M.R. in London Road, Nottingham.

NEW 50-CYCLE LOCOMOTIVE

G.E.C. Units for British Railways

NORTH BRITISH LOCOMOTIVE BUILDS FRAMES

THE first of ten 25,000-volt 50-cycle electric locomotives ordered from the General Electric Co., Limited, is now in service on driver training on the London Midland Region of British Railways—it also figured in the rolling-stock exhibition organised at Marylebone last week in connection with the Institute of Transport congress. The locomotives are designed for a wide range of passenger and freight duties, including the haulage of 100 m.p.h. express passenger trains. They have been given British Railways type A designation, the serial numbers being E3036-E3045 inclusive. Provision has been made for operation on both 25,000 and 6,250 volts, 50-cycle a.c. supplies. The locomotives have been designed to the requirements of the British Transport Commission, under the general direction of Messrs. S. B. Warder and J. F. Harrison, chief electrical engineer and chief mechanical engineer respectively of British Railways Central Staff.

Sir Leslie Gamage, chairman and managing director, General Electric Co., Limited, at the controller of the G.E.C. 50-cycle locomotive for British Railways exhibited at Marylebone last week for Institute of Transport members

The mechanical parts have been designed and built by the North British Locomotive Co., Limited, as sub-contractor to G.E.C., and the specification requirement of a maximum axle load of 20 tons, using the Bo-Bo wheel arrangement, has been met with a comfortable margin, the overall weight of the first locomotive being below 77 tons. This has been achieved, using traditional materials, by very close attention to the structural and detail design for minimum weight of all major and minor components.

The locomotives have been designed to give the advantages of a duplex equipment. With the exception of the main transformer and its associated equipment, the unit can be divided into two virtually identical halves. In an emergency single traction motors can be isolated, and a complete bogie, with its auxiliary equipment, rectifiers, and the rest, can be cut out.

The new G.E.C. locomotive No. 3037 at Marylebone after inspection by Mr. F. A. Manley, manager, G.E.C. traction department, London, Mr. R. N. Millar, managing director, G.E.C. engineering group, Sir Leslie Gamage, chairman and managing director, G.E.C., and Mr. Stanley B. Warder, chief electrical engineer, B.R. Central Staff, British Transport Commission

Arrangement of Equipment

The high-voltage equipment is contained in a steel enclosure, one side of which forms the inner wall of the corridor connection between the two cabs. The supply changeover switch and the motor-driven tap-changer are mounted on top of the main transformer, which is centrally located and divides the high-voltage compartment into two sections.

PRINCIPAL DIMENSIONS AND DATA

Wheel arrangement	Bo-Bo
Maximum speed	100 m.p.h.
Continuous h.p. rating	3,300
Maximum tractive effort	50,000 lb.
Tractive effort at continuous rating	21,000 lb. at 54 m.p.h.
Weight in working order	76·5 tons
Length over buffers	53 ft. 6½ in.
Height over cab	12 ft. 4⅞ in.
Maximum width	8 ft. 8¼ in.
Bogie wheelbase	10 ft.
Bogie pivot centres	29 ft. 6 in.
Wheel diameter	4 ft.
Radius of minimum curve	4 chains

Each of these sections contains one of the h.v. apparatus frames and one bank of rectifiers with secondary h.v. gear. These are symmetrically arranged about the transformer, access being obtained through doors from the corridor.

Machinery compartments, housing the m.g. blower sets and other auxiliary equipment, are located at each end of the locomotive between the cab vestibule and the h.v. compartment. At one end are mounted the two exhauster sets, a rack for the brake equipment control valves and a chemical toilet. The main air compressor is mounted at the other end, together with an auxiliary compressor which is normally used when preparing a locomotive for service, and which runs off the battery to provide sufficient air pressure to raise the pantograph and close the air-blast circuit breaker.

The access doors to the h.v. compartment are fully interlocked with the pantograph-raising and roof-earthing gear in such a way that they cannot be opened without first dropping the pantograph and earthing the circuit breaker. The pantograph cannot be raised until the doors are closed and locked. Batteries, weak-field resisters and air reservoirs are carried under the main frame between the bogies. The principal runs of cable are carried in a duct below the corridor floor.

Current is collected from the overhead line by one of the two Stone-Faiveley pantographs, feeding through a Brown-Boveri air-blast circuit breaker to the supply changeover switch. This is an off-load switch operating under the control of automatic voltage detection and selection equipment to give the correct transformer tapping for running on a line voltage of 25,000 or 6,250 volts.

The transformer output is taken from two secondary windings, each of which supplies eight Com-Pak mercury arc rectifiers. These are arranged so that each pair of traction motors is fed in bridge by four rectifiers from each secondary. The connections are such that the motors operate in series pairs under normal conditions, but are effectively in parallel under wheel-slip conditions. Return current to the track is taken through earth brushes running on the outer ends of the road wheel axles.

Rectifiers and Transformer

To meet the traction duty requirements of minimum size and stability in operation, liquid cooling is used for the excitron type rectifiers. Separate cooling circuits for the anodes and cathodes ensure that the optimum anode and cathode temperatures are maintained under thermostatic control to within close limits. Extended tests in railway vehicles under varying service conditions have demonstrated the suitability of this type of rectifier for traction duties.

The main transformer is of the oil-cooled type in which the oil is rapidly circulated through a radiator by a motor-driven pump. Each motor-generator blower set supplies air for two traction motors and one half of the electrical equipment. The axial type blower is mounted vertically below the motor generator, drawing air through the rectifier radiator mounted behind louvres in the body side. From the blower the air is passed downward into a duct, from which feeds are taken to the traction motors and to the air-cooled main motor chokes and the transformer-oil radiator. Air flows upwards through the motor chokes and through one half of the horizontally mounted oil radiator, being discharged to atmosphere through a hooded cowl on the roof. Pumps for the rectifier coolant and transformer oil circulation are driven by small induction motors supplied from an auxiliary winding on the main transformer.

Control Scheme

The transformer is provided with a separate tapped regulating winding under the control of the h.v. tap-changer, arranged to give a total of 38 steps of voltage regulation. The tap-changer has been specially developed for traction applications and combines positive step location with the ability to run through rapidly either up or down, thus facilitating quick switching operations.

The master controller is arranged to give either individual notch control or automatic run-up or run-down. A total of 40 notches is provided, comprising 38 voltage steps, followed by two steps of motor field weakening on full voltage. An over-current relay is arranged to lift at a predetermined current to arrest further notching, so as to reduce the likelihood of tripping the overloads under run-up conditions.

Each traction motor is fed through an overload-controlled electro-pneumatic contactor and a second contactor which are used together for motor isolation. The two steps of field weakening are provided by means of divert resistors and a permanent smoothing divert resistor is connected across each field. Reversal is effected by two electro-pneumatically operated two-motor reversers.

Motor-Generator Blower Sets

Each of the two vertically mounted motor-generator blower sets incorporates a single-phase a.c. driving motor, a d.c. generator and an axial-flow blower. Power for the driving motors is taken from the main transformer auxiliary winding, and for starting purposes the sets are run-up to speed by motoring the generator from the battery, automatic changeover to the a.c. supply being provided.

The output voltage of one set is regulated and is used to charge the battery, and also to operate one exhauster set and the auxiliary compressor. The other set, which is not voltage regulated, operates the main compressor and the second exhauster set. Provision is made in emergency for isolating either set, all essential duties being then taken over by the other.

Traction Motors and Drives

The four traction motors are six-pole series-wound force-ventilated machines provide with compensating windings. Class H insulation is used throughout and the ratings are as follows: Continuous rating 750 h.p. 725 amp. 850 volts 1,165

(*Continued on page* 12)

THE TECHNICAL SUPERIORITY OF FERODO AM LININGS –FURTHER CONFIRMATION

ANOTHER AM SUCCESS

Ford have specified Ferodo AM brake linings exclusively for all models of 5 tons and over in their immensely popular Thames Trader range, because they have found them to be technically the most suitable.
Many operators all over the country recognise that AM linings give the best combination of high friction, resistance to fade and extreme durability, *with maximum mechanical strength.*
Ask your nearest Ferodo depot for details of the new Ferodo AM relining service.

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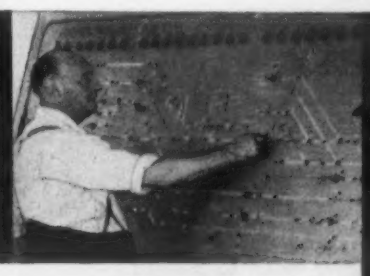
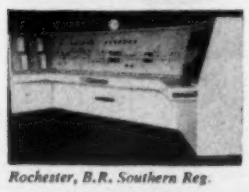


Elsburg, South African Railways with provision for extensions

Sittingbourne, B.R. Southern Reg.

Huddersfield B.R.Nth. Eastern Reg.

Rainham, B.R. Southern Reg.



Rochester, B.R. Southern Reg.

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As pioneers in Relay Interlocking Control (first installation at Thirsk on the York-Northallerton line in 1935) S.G.E. remain in the forefront in this form of signalling control which has superseded the mechanical or electro-mechanical systems formerly used.
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THE SIEMENS AND GENERAL ELECTRIC RAILWAY SIGNAL COMPANY LTD., EAST LANE, WEMBLEY

LORRY—BUS—COACH

Parcels Carriers Start Continental Links

THROUGH a new company, Eurofreight, Limited, independent parcels carriers are now offering throughout services to Continental destinations via a sea route (Truksea service) or by the Channel Air Bridge (Trukair service). Already the service is operating to the Netherlands, Germany, Belgium and Luxembourg, and other countries are certain to be added quickly. Eurofreight is a wholly British-owned company made up of several U.K. parcels companies led by Atlas Express Co., Limited, Essex Carriers, Limited, John Forman, Limited, Newcastle upon Tyne, A. Packham and Co., Limited, and S. E. Thomas and Son, Limited, Maidstone. The directors are drawn from the first four companies and responsible for the development, into which two years of research has gone, is Mr. J. K. Ambler, of Atlas Air Express, which has been operating Trukair service for some time.

Customers may hand their orders either to their regular forwarding agent or the nearest depot of Eurofreight. The carrier recovers his transport charges from the latter. At the outset Truksea traffic is routed via the Atlas Express depot in London, then via Chambers Wharf to ships en route to Amsterdam. Newcastle may later become a terminal. Trukair service is via Southend to Rotterdam, or Ostend in the case of Belgium. Consignments sent by sea go in 1- to 4-ton containers. Continental carriers, Reederij Van Sweeten N.V. in Amsterdam, Nellen and Quack Transportgesellschaft, München Gladbach, and F. Halbart et Compagnie, Brussels, handle movements in the Netherlands, Western Germany, and Belgium or Luxembourg respectively. A door-to-door tariff for consignments up to 4,000 kg. on either service is available. There is no freight classification. Transit times are 2-4 days by air, two or three days longer by the sea route.

London Haulage Takeovers

RECENT months have seen two further acquisitions to the Wapping-based Davis haulage group, A. May Transport, Limited, formerly at Islington, with 21 A-licensed vehicles (55 tons) and now Albert E. Ewer, Limited, based at Shoreditch, with an A-licence for 34 vehicles (95 tons) and five trailers (10 tons). The Osborn Transport Co., Limited, of Upper Holloway, with an A-licence fleet of nine vehicles, and engaged in van traffic, pianos, antiques, etc., is the subject of a takeover application by the Edinburgh haulier and remover, Bell and Co. (Transport), Limited. New vehicles have already been placed in service.

Threadbare Road Criticisms

IN Newcastle upon Tyne, Mr. R. N. Ingram, national chairman of the R.H.A., said that he was "sick and tired" of hearing from a small but vocal section of our rulers at Westminster that all transport problems would be solved by transferring heavy traffic from road to rail. This threadbare argument was trotted out to explain the rising toll of road accidents, especially during holidays, but he contended that the transfer of heavy traffic would make no difference. In 1958, 375,000 road vehicles were involved in accidents and of these, only 13,000 were heavy vehicles. It was odd that so much criticism should be directed against only 3 per cent of the vehicles involved.

Marking of Dangerous Loads

LAST week in the Commons the Secretary of State was asked if he was aware of the large quantities of dangerous acids, oils and bulk cement [why this was included is not clear.—EDITOR] now being carried in road transport tanks; and, in view of the special dangers arising out of an accident or collision with these vehicles, if he would introduce legislation to deal with this matter. The answer, from Mr. Dennis Vosper, was that the question whether additional safety requirements were needed covering the conveyance of dangerous substances by road, is kept constantly under review. The Home Office is at present co-operating with the chemical and transport industries in preparing a scheme for the marking of vehicles carrying dangerous substances.

Special insulating bricks being unloaded from an Austin B.M.C. diesel on a Holborn site; right, gas oil and light fuel oils are the cargo carried by this Albion Reiver with Yewco 2,500-gal. tank

Leeds Consent Appeal

THE Minister of Transport has dismissed the appeal lodged by the Farsley Omnibus Co., Limited (associated with Barr and Wallace Arnold Trust, Limited) against the decision of the Yorkshire area Traffic Commissioners granting Leeds City Transport consent to run buses on the ring road between New Road Side (within the area of Horsforth Urban District Council) and Rodley Lane (within the area of Pudsey Borough Council). The Corporation put forward two distinct types of service in support of the application: first, a service from the south-western end of the road concerned along the northern part of the existing ring road; second, a general scheme for services round the whole ring road when completed. The Minister agrees with his inspector that the Commissioners could not properly, in all the circumstances of the case, found a grant of the consent applied for on services of this latter kind. For such services could not be operated by the Corporation without further consents—in respect, for instance, of the not yet completed portion of the ring road between Rodley and Swinnow—to which other objectors might well appear.

For the purpose of the first type of service it was in the Minister's view necessary for the Corporation to show, in accordance with section 102 (4) of the Road Traffic Act, 1930, that the requirements of the applicants' district would be served, either directly or indirectly, by such a service and the Commissioners ought to have had evidence of some need for the service and some ground for holding that it should be provided by the applicant in whole or in part. It was not necessary for the Corporation to show that a service would necessarily be operated solely by it for it to be adequate justification for a grant of consent. In the Minister's opinion, this would be to impose an altogether too high requirement: on this basis, evidence which would suffice to establish a claim to a share of services on a road service licence application might be held to be inadequate to justify the necessary consent; and this would in the Minister's view be unjust. It was clear from the evidence that, if such a service were provided, the Corporation would have a good claim to provide it in whole or in part. The present decision is only on the consent, not the necessary road service licence.

Plastics for Food Van Interiors

WITH interior maintenance of its delivery vehicles in mind, J. Lyons and Co., Limited, is now using Warerite plastics to replace the plywood and odourless paint linings of its tray-carrying delivery vans operating out of Cadby Hall, West Kensington, food preparation factory. Former steel runners (upon which the trays slide and are carried, and which have constantly to be oiled) are being replaced with lightweight aluminium runners. The steel runners previously caused trouble by the oil finding its way on to the paint work: the persistent scuffing of the trays across the surface of the walls has also been a nuisance. Now, even if the oiled runners remain, a wipe down with a damp cloth is all that is needed to clean these surfaces.

New vans now coming into use are lined on two side walls, bulkhead and half roof with Warerite in a blue shade; the other half of the roof is a glass fibre skylight. Floors are of aluminium and the complete interior of one of these tray-carrying vans can be wiped and mopped into faultless condition in a very short time.

Push-Chair Space in P.A.Y.E. Buses

PORTSMOUTH Corporation is to modify its new one-man operated single-deck buses, which carry 34 sitting and 26 standing passengers, to enable them to carry folded push-chairs. By reducing the number of standing passengers by two, a rack can be provided opposite the exit door of the buses. This follows complaints from residents in outlying housing estates.

B.R.S. Acquires London Parcel Carrier

ON April 29 British Road Services acquired N. Francis and Co., Limited, the London parcels carrier whose depot is at Dalston. The company will continue to trade under that name but the previous board has resigned. In recent years a garage business at Forest Gate, now Francis Motor Service, Limited, has been acquired. This is not involved in the deal and Mr. R. D. Mackay, manager of the parcels company, will run it. The new chairman of the parcels company is Mr. A. J. Wright, divisional manager, South Eastern Division, British Road Services, and the directors are Messrs. J. L. Willoughby, traffic manager (parcels), B.R.S., A. F. Walton, London parcels manager, and E. Moffat, divisional accountant, South Eastern Division, who is also secretary of the company. Manager of the company is Mr. F. R. Parkin, who had been selected for the post of area manager, London provincial services, B.R.S., under the 1959 London parcels plan.

N. Francis was established at Shoreditch in 1878 and initially specialised in the movement of pianos. The parcels service really started about 1922. The Dalston depot was acquired in 1934 and a parcels service roughly 25 miles around London is operated, from Hertford to Leatherhead and Windsor to Gravesend. The parcels fleet, almost entirely of Ford 2-ton vans, but including also some Austins and Dennis Paravans, numbers 86 vehicles, and there are nine contract vans. This acquisition means that within London there is a virtual concentration under one control of parcels carrying by road transport.

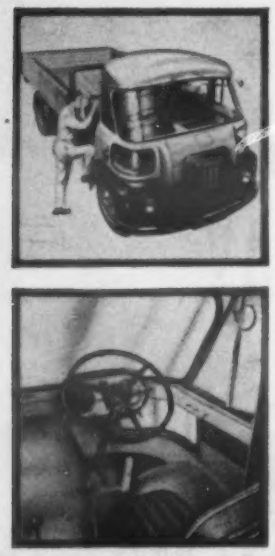
Bus and Coach Developments

Eastern National Omnibus Co., Limited, seeks the Rowhedge—Colchester service of Mawdsley and Brown.

Charles W. Banfield, Limited, Peckham, applies for the old-established London—Clacton coach service of Empire's Best Coaches (Webber Brothers). Banfield has not hitherto been associated with any all-year-round services.

Thames Valley Traction Co., Limited, applies for a daily service between Staines West Station and Colnbrook Station via Yeoveney and Poyle. There would be through fares to West Drayton, the section from Colnbrook being by train. This replacement service is necessary while the Staines by-pass road bridge is being built.

Commencing May 1, London Transport bus route 86 operates daily to Upminster (Park Estate) and route 170 is replaced on Sunday by 170A, between Bloomsbury and Loughton Station via Leyton and the route of 38A. Route 256 is curtailed Saturday p.m. to run Chingford Mount—Hackney (Well Street). From May 11 177A will be extended between peaks only Monday to Friday to run Abbey Wood Estate—New Cross.


easier access
all round vision
safety door closed
safety door open

MORRIS ANGLE-PLANNING gives you
KERB-VIEW FLOOR WINDOWS

One of the great safety features on Morris angle-planned vehicles . . . floor windows. Gives the driver a closer view of the kerb, lets him park and manoeuvre more easily, more precisely. Lets him see whether children are playing near the wheels. Maintaining this extra-range vision the angle-planned cabs have swept windscreen, generous quarter lights, wide door-windows, broad rear windows. All contributing to safer driving, quicker turn-round. The doors, too, establish a new concept in cab access. Rear hinged and angled, they project only an inch or two beyond the vehicle width when fully open. They save effort getting in and out, cannot interfere with passing traffic. Adding to angle-planned efficiency in driving are features such as: four-way seat adjustment, twin link driven wipers, practical lighting control, servo braking. You get choice of diesel or petrol power too. Plus the knowledge that-bumper to tailboard-the angle-planned vehicles are built Morris tough for long, profitable service. So much - with the saving advantage of new low prices, too. Your Morris dealer will tell you more.

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MECHANICAL HANDLING EXHIBITION

Rewarding for Transport Men

NEW TECHNICAL ACHIEVEMENTS

ABOUT 500,000 cu. ft. of floor space is occupied by the Mechanical Handling Exhibition of 1960, which opened on Wednesday this week at Earls Court and extends to May 13. As always it is not possible to refer at this point to every new exhibit of transport and distribution interest because there are always last-minute announcements. It will be seen, however, that Lansing-Bagnell has made a major breakthrough with 2,000-lb. and 3,000-lb. electric fork trucks which will perform at up to 13 m.p.h., double the normal speed of such trucks. Everywhere in this sphere of handling there is evidence of simplification and better grouping of operating controls.

A 7-ton load of window frames being transferred on Cargon units from a dispatch bay to lorry

A Versatile Group of Trucks

Conveyancer Fork Trucks, a member of the Owen Group and now claimed to be the largest manufacturer of fork trucks in the Commonwealth (10,000 Conveyancers are at work in 92 countries), has considerably diversified its range of equipment in the period since the 1958 exhibition. Besides its own range of petrol, diesel, battery-electric and l.p.g. fork-lift trucks the company now markets the Conveyancer-Scott electric trucks and tractors and Conveyancer-Lande hand trucks, the Conveyancer Robotug using the E.M.I. electronic guidance system, and the Shorland straddle carrier, for which Conveyancer is the sole concessionaire.

A new marketing arrangement between Conveyancer and E.M.I. Electronics, Limited, provides for this Robotug system to be fitted to Conveyancer-Scott electric trucks. The first installation has been working for a year at the Western Region goods depot at Newton Abbot and similar trucks have been ordered for Canada, Poland, Germany and Italy. The Newton Abbot installation was illustrated in MODERN TRANSPORT of May 2, 1959. More complex systems have now been devised so that more variety of routes can be provided and there is a block safety system whereby the track is divided into a number of sections. Normally these are de-energised but as a tractor unit proceeds the section in front of it is energised by a control unit mounted on the tractor. The same unit de-energises the block vacated so that two Robotugs on the same route will always be separated by a minimum of one "block," thus minimising the risk of collision.

Lansing-Bagnall Rapide 2,000-lb. high-speed electric fork truck in an outdoor setting

Safety Devices

The block system of Robotug operation is being demonstrated at Earls Court. It is stated that a comprehensive after-sales organisation has been established. Because of the absence of the labour element, it is said, the initial cost of the equipment can be recovered in a matter of months. The system of energised blocks can also be utilised to work warning signs or traffic lights at points where the driverless truck may conflict with the paths of other vehicles.

Pride of place in the conventional fork-lift truck exhibits is held by a new 1,500-lb. electric truck which has a combined direction-speed control unit operated by a two-pedal arrangement on the right-hand side of the steering column. Depression of one pedal simultaneously selects a given direction of truck travel and controls truck speed in that direction. There are separate pedals for forward and reverse travel, with infinitely variable speed control achieved by means of a carbon pile system. Speed unladen is 4½ m.p.h. The TC series 5 fork truck with 6,000 lb. capacity has redesigned bodywork and unit-construction power train to facilitate major overhaul tasks.

Alongside its 15,000 lb. and 18,000 lb. capacity Freightlifter heavy-duty fork-lift trucks **Shelvoke and Drewry** shows the lighter 72 model industrial fork truck (12,000 lb.) on cushion tyres with a high-lift hydraulic roll clamp attachment, as used in the newsprint industry. Among the exhibits on the **I.T.D.** stand are no fewer than seven new designs, six electric Stacatrucs, the seventh a diesel Stacatruc 624D with power steering. This is the 6,000-lb. model. The first American Clark reach truck to arrive in this country (Clark trucks are made here by I.T.D.) is also on show. It is designed for service in 6-ft. aisles. Details of these trucks are being made available.

Electric Fork Truck Speeded Up

Lansing-Bagnall can always be relied upon to produce evidence of new thought at the exhibition; this time it is a fast battery-electric fork truck range, two models of 2,000 lb. and 3,000 lb. capacity. The Rapide fork truck, on pneumatics, is capable of speeds of 12-14 m.p.h. outdoors as well as indoors, thus challenging for the first time anywhere it is claimed the supremacy of the petrol, diesel or L.P.G. truck in applications where long distances must be covered, whether on good surfaces or indifferent ones.

This revolution in the conception of the electric truck has been achieved by using a dual-voltage current supply. From start to 7 m.p.h. the accelerator pedal taps a 24-volt supply but depression of the pedal beyond that point brings in a 48-volt circuit. It is claimed that the truck can put in a 6-hr. continuous stint at the higher speed with something left in reserve. The battery on the prototypes is an Exide, with "gauntlet" cells in an all-steel case. Capacity is 387 amp.-hr. at the six-hour rating. A smaller reach truck, the FRER333 3,300-lb. Spacemaker, now augments the established FRER245 4,500-lb. model and the FRES225 2,500-lb. model. Featured in the new truck is a "motor in wheel" drive wheel, which requires less space. All these reach trucks are rider-controlled.

J. E. Shay, the parent company of Lansing-Bagnall (its title was compounded of the names of the joint managing directors, Messrs. J. R. Sharp and E. E. Kay) has been known for many years in the precision engineering field and for its Rotoscythe and other power garden tools. Now it enters the mechanical handling sphere with a power stacker and a hand-hydraulic stacker, both hand-propelled and, it is stated, with remarkably low first cost. They are cheap enough to bring mechanical stacking to quite small warehouses and even retail stores.

Hunter hand pallet truck with spring-loaded ladder. This is useful for making up orders in the warehouse

Yale Exhibits

Marking the inauguration of **Yale** diesel truck production in this country is the D51, 4,000-lb. model on exhibition. The Perkins Four 203 engine is fitted. The Yale tractor shovel is now introduced into this country, the first model being a 1½-2¾ cu. yd. version according to requirements. A feature is the reverse camber lift arms, which

(*Continued on page* 14)

SCOTT ELECTRIC FIXED PLATFORM TRUCK

SCOTT ELECTRIC ELEVATING PLATFORM TRUCK

NEW ADDITIONS TO CONVEYANCER

SCOTT ELECTRIC STANDARD TUG

New Additions to the Conveyancer Range... Scott Electric Vehicles... towing tractors, elevating and fixed platform trucks... Electronically controlled Robot Systems. The Scott electric truck in all its various forms is being used extensively throughout Great Britain... in station sorting offices of the General Post Office, in goods and passenger stations of British Railways, in factories and in hospitals.

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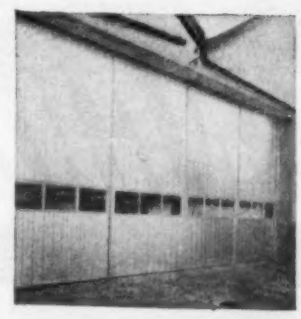
Conveyancer-Scott ELECTRIC VEHICLES LTD.
LIVERPOOL ROAD, WARRINGTON
Telephone: 35241, Grams: Hydraulics, Warrington

TODAY DEMANDS THE STREAMLINED LOOK

Architect: H. A. F. Spooner, L.R.I.B.A.



Exceptionally light, modern and pleasing in appearance, aluminium combined with ESAVIAN craftsmanship produced these sliding doors for the Maidstone & District 'Bus Company.
ESAVIAN designs for the modern age, for maximum efficiency. Aluminium doors by ESAVIAN are light to operate, low on upkeep costs (never rust, never need paint), look good, mean a clear approach into the depot. And there are no bumps — track is flush with floor.
ESAVIAN design and make these doors — ESAVIAN also fit them. Next time you need to fit doors to a big opening, call in ESAVIAN — they will give you expert service from the first consultation to the final installation.
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REBORN IN LEICESTER

A Widely-Based Haulage Fleet

ALTHOUGH it has been seen on the roads for rather less than ten years, the title of Federated Conveyers, Limited, the Leicester haulage business, embraces a name which goes back to the dawn of motor transport in the East Midlands since the directors are members of the Kirby family. From 1925 until nationalisation Mr. J. Arnold Kirby and Mr. W. H. Kirby traded as the K.C.P. Company and built up a fleet of 30 heavy vehicles based at Blaby.

The business was commenced in 1911, with the collection of milk from farms in a Stanley steam car converted into a light lorry. The brothers were agricultural produce dealers ("K.C.P." stood for "Kirby's Country Produce") and these traffics, together with collection and delivery work around Leicester, formed the early basis of business. After the 1933 Road and Rail Traffic Act it was decided to concentrate on haulage.

One of ten Bedford articulated vehicles with a load a little out of the ordinary. The semi-trailer is a B.T.C. Four-in-Line model

London Moves

When nationalisation loomed up in 1948 the Kirbys felt strongly enough about it to auction the entire fleet as chattels and to surrender their A-licence thus, of course, foregoing, the goodwill of the business. Some years previously, in 1943, a company had been formed with the title, Federated Conveyers, Limited, to provide an office for the London end of operations and also to act as a clearing house. This survived the vicissitudes of the war period and the early years of nationalisation and in 1951-52, at the request of certain customers, some five or more vehicles were purchased to work on C-hiring allowances. The present managing director, Mr. John E. Kirby, had joined the business in 1948—the year that K.C.P. had been voluntarily disposed of.

Since 1953 the story has been one of steady rebuilding of the fleet—with 55 vehicles it is now nearly twice the size of the former company. In that year Mr. Kirby applied for the reinstatement on A-licence of the prenationalisation fleet of 32 vehicles, since it could be claimed that they had not been replaced, but on advice this was not pursued. Instead the London haulage business of C. J. Saunders, Limited (with nine vehicles), was acquired in 1954 and Springthorpe (Transport), Limited, these two being expanded by the addition of special A vehicles to about 18 strong. Other acquisitions and SA-licence bids have brought the fleet to the total of 55, of which only three are on contract A-licences. In 1958 29 vehicles operated by local hauliers trading as J. Monk and Company were purchased but only five were retained by Federated Conveyers. Turnover is currently running at the rate of £300,000 per annum.

Areas Served

The business is by no means concentrated in Leicester, since only 25 of the fleet are based there. There are 17 in London, seven in Manchester and six in West Bromwich and daily services are operated between these points as well as by on-demand journeys to almost every part of the country. Principal areas served from Leicester are London, Manchester, Scotland, Newcastle, South Wales, the South Coast as far round as Devon and Cornwall and this pattern is typical of other branches.

Highly-diversified Leicester provides a large variety of traffics from which may be singled out steel, shoes (bulked in cartons) delivered along the South Coast, export machinery, building materials, especially plasterboard, tyres (manufacture is expanding here), reprocessed fibres and plastic bottles, the two last-named being relatively new products of local industry.

Recent additions include these Atkinson rigid and articulated units. The latter draw York tandem-axled semi-trailers

Traffic is collected and delivered within a 25-mile radius in the Home Counties and originating loads here consist largely of asbestos sheets and products —bricks, pipes, flues—for which sided vehicles with stake extensions are required—tyres, ingots, metals, proofing materials and miscellaneous imports. While asbestos sheets can be fork-truck loaded, the smaller items must be carefully and expertly hand stacked in straw and drivers with experience are sent on this job. Asbestos bricks load twice as many as the ordinary sort and loading time is, therefore, important. Despite the fragility of this traffic the claims experience is good. From London services are operated to South Wales, the Midlands, Manchester, the North-East and Scotland. The picture at Manchester and West Bromwich as regards destinations is similar.

Studying Your Customers

In fact these long-distance runs are made to suit the demands of customers rather than to establish a network of services. Federated Conveyers decided at the outset that it was better to secure good connections and to offer service to any point rather than to identify itself with rigid routes. If you can take anything the customer has to offer, you can get better rates—that is the philosophy and there is no doubt that an operator who ties himself to one or two daily trunk services is sometimes at the mercy of rate-cutters, as well as trade or seasonal fluctuations.

There is no night running as such, which may seem a little strange until one realises that most of the journeys are around the 100-mile mark and an early start—in some cases 4 a.m.—reduces the advantage gained by night trunks. The advent of the M1 has, of course, increased the possibility of this type of operation; from Leicester to London, joining the motorway at Crick adds only three or four miles to the run and according to surveys cuts 20-25 min. from the running time.

With the introduction of the universal 30 m.p.h. speed limit for goods vehicles journey times have been speeded up with the agreement of the drivers. This change is hastening the conversion of the fleet to the heaviest class of vehicle as opportunity permits. Actually the fleet is a very modern one having been renewed since 1956 with the exception of four vehicles, but there is still a substantial proportion of 7-ton four wheelers and in common with most operators, Federated is moving constantly towards the more economical larger vehicle dictated by conditions in the industry.

High-Speed Vehicles

With a few exceptions the heavyweights are A.E.C. (with seven Mercury 9-tonners on order), Atkinson and Foden. Of the eight rigid or articulated eight-wheeled Atkinsons already five artics have the Gardner 6LX 150-b.h.p. engine, with ZF air-actuated gearbox, giving them a top speed of 58 m.p.h. This is in line with what is obviously going to be the favourite answer to the motorway challenge, at least in the foreseeable future. It seems that operators are ready to make do with 150 b.h.p. instead of the much higher ratings that were once freely forecast. The combination of this and a twelve-speed box will rise to most occasions, on the one hand a 40-45 m.p.h. average on the motorway, taking the levels with the gradients and on the other, ability to accelerate with the traffic in urban areas.

Vehicles average about 40,000 miles per annum, their drivers £18-£20 per week on the largest vehicles, £15 on the smaller ones. The pay packet is based on a standard £12 10s. per week plus a bonus computed on ton mileage, the result being not less than would be arrived at by reference to the statutory wages orders.

Plans are well advanced for the extensive development of a five-acre site at Market Harborough, 15 miles from Leicester, where there is already a filling station, service station for the fleet, and a heavy breakdown service. Maintenance, overhauls and bodybuilding will be done here. Already, too, there are about 1,000 tons of cased plant, fertiliser, grains, proteins, in store under cover and it is planned to add sections to this warehouse accommodation as demand arises. There is a shortage of storage space in Leicester and the prospects therefore seem bright.

The architects for the new Millwall depot of J. Spurling, Limited, were Messrs. Daly and Burn, AA.R.I.B.A., 45 Blackfriars Road, London, S.E.1, and not as shown in our March 26 issue.

25 kV 50 cycle, single phase A.C. Electric Locomotive, built in co-operation with the Traction Division of A.E.I., for British Railways.

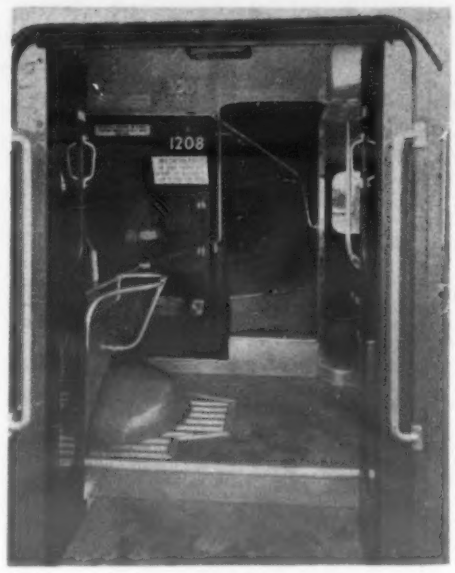
THE BIRMINGHAM RAILWAY CARRIAGE & WAGON CO·LTD
Smethwick
TELEPHONE SMETHWICK·1881
TELEGRAMS 'CARRIAGE SMETHWICK'

A FORWARD ENTRANCE 72-SEAT BUS

The Latest A.E.C.-Park Royal Bridgemaster

FOR SOUTH WALES TRANSPORT

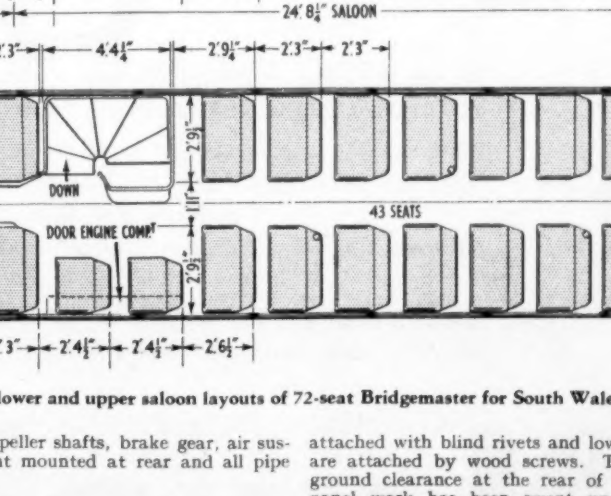
FOLLOWING a demand from various operators for forward-entrance vehicles coupled with the operating and technical advantages of the A.C.V. Bridgemaster rear-entrance vehicle, the combined A.E.C. and P.R.V. design teams have now produced the forward-entrance Bridgemaster. The South Wales Transport Co., Limited, has begun to take delivery from the A.C.V. group of five such Bridgemasters with all-metal Park Royal bodywork, seating 72 passengers, incorporating the South Wales Transport special operating requirements, and fitted with A.E.C. running units. The overall dimensions are 30 ft. by 8 ft. and the vehicle embodies knowledge and experience gained by the design section of both establishments which started in the early stages of the London Transport RM class bus.



Entrance showing rail to protect flywheel housing and stair layout

Layout

Comfortable seating accommodation has been achieved with wide gangways, and the Park Royal designers have gone very carefully into the location of entrance, staircase, luggage accommodation and passenger flow to both saloons. The complete vehicle achieves the normal low height arrangement for Bridgemaster layout, with centre gangway running the full length in both saloons, engine at the front end, forward entrance with double jacknife doors operated from the driver's position, forward ascending spiral staircase mounted at the front offside of the body and luggage accommodation arranged below the stairs and on a tray across the lower saloon front bulkhead. There is standing accommodation at the entrance for the conductor which does not obstruct passenger flow. The driver has ample space to operate the entrance doors and access to the roomy and draughtproof cab is by an off-side sliding door.



Modifications to the front end of the Bridgemaster construction to accommodate forward entrance

The normal line of demarcation agreed between chassis manufacturer and bodybuilder does not apply with a vehicle of this nature and the absence of the normal main chassis frames means that much stress and strain must be taken by the body structure. While the front frame assembly—including engine, front axle and steering—and rear frame assembly—including rear axle and air suspension, is supplied by A.E.C., Limited, together with normal chassis auxiliary equipment, the complete front end superstructure covering the chassis unit, i.e. wings, bonnet and cowl is supplied and fitted in position by Park Royal Vehicles, Limited. Other chassis equipment supplied for fitting by the bodybuilder includes the Panhard rod, propeller shafts, brake gear, air suspension equipment mounted at rear and all pipe runs.

Engine Superstructure

The engine superstructure is of modern design, enclosing the radiator and constructed generally of steel. The engine shield in the driver's cab is insulated and the bonnet top is provided with opening and closing mechanism. The bonnet cover is arranged to give the maximum amount of space to carry out maintenance to the engine, and with entrance towards the front of the bus the nearside bulkhead window is set forward at an angle which enables the driver to view the platform and entrance doors through a clear curved plastics panel fitted between the nearside bulkhead window and the bulkhead centre pillar. The bulkhead and sill are fully insulated to minimise engine noise.

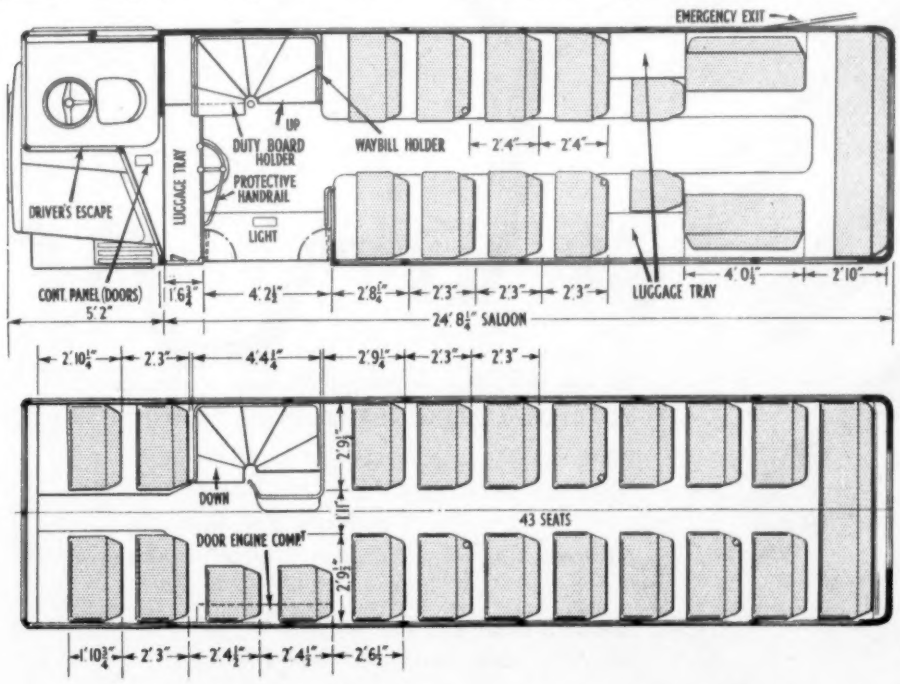
The main body structure, except for the main underframe, includes steel components, with interior truss panels running from floor to waist height in the lower saloon and also from the lower saloon vent rail to the upper saloon waist. All truss panels are secured into position by solid rivets. The lower saloon floor structure incorporates high duty alloy and mild steel sections with high duty heavy gauge alloy panelling riveted to the upper surface. Specially strengthened locations are included for the automotive units and with the incorporation of the forward entrance the design around that area has been given special attention, as indicated in a sketch reproduced. The rear wheelarch framework is manufactured from high duty aluminium alloy and incorporates alloy wheelarches with chequered alloy seat risers. Full access is provided, from above, to the air suspension bottles fitted below the longitudinal wheelarch seats at each side of vehicle.

Protection

All components used in the structure are processed in the company's recently installed protective treatment plant where full derusting, degreasing, etching and stove enamelling is applied to the components after shaping and drilling and prior to final assembly on the production lines. The main exterior panelling of the sides and rear is in aluminium with front and rear domes down to waist rail height carried out in glass fibre reinforced plastics. The main roof panels are solid riveted into position and other exterior panels are attached by blind rivets. The interior roof and cove panels are in 20 gauge aluminium and aluminium cover strips are applied at all joints. Upper saloon ceiling panels are attached with blind rivets and lower saloon panels are attached by wood screws. To provide extra ground clearance at the rear of the vehicle, the panel work has been swept upwards from the side pillar immediately to the rear of the rear wheelarches.

The low entrance step to the platform and lower saloon gangway will be of great assistance to children and elderly people, as it is only approximately 5½ in. in height. The entrance stepwell and entrance steps are of aluminium alloy and a single skin full height partition, glazed above the waist, is fitted to the rear of the doorway. Doors are of the electrically operated double-folding type, glazed above and below the waist, and operated by the driver by switches fitted on the nearside.

(To be continued)



Plans of the lower and upper saloon layouts of 72-seat Bridgemaster for South Wales Transport

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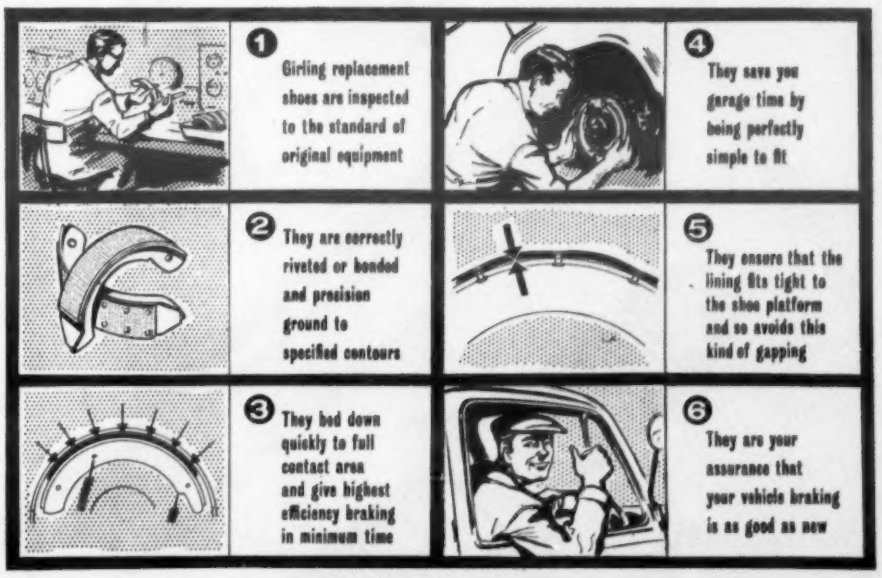
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NEWS FROM ALL QUARTERS

Mobile Coal Order Offices

Three mobile coal order offices to serve retail customers have been put into service by the National Coal Board in parts of Derbyshire and Nottinghamshire. Each is equipped with a counter, display cases and seats for waiting customers.

Interim Treatment of Railway Deficit

Last week the Minister of Transport stated that a supplementary estimate would be presented before the parliamentary summer recess to deal with the estimated deficit of the B.T.C. for 1960-61. In the meantime use was being made, when necessary, of the Civil Contingencies Fund.

Waterloo B.T.C. Building Turned Down

The Minister of Housing and Local Government and the Minister of Transport have refused an application by the British Transport Commission to build an 11- and 12-storey shop and office block adjoining Waterloo Station, London. Refusal was on the ground that the proposed building, costing £3,500,000, was too big and did not conform to the plot ratio.

Date for Trial Trains on Hertford Line

On April 25 electric power at 25,000 volts was switched on and overhead lines energised over a 7½-mile stretch between Broxbourne and Hertford East in the Eastern Region suburban electrification programme. Trial train running is due to start on May 23. Ten of the 18 platforms at Liverpool Street Station will be out of action this weekend while engineers install overhead wiring.

By-Pass for Stevenage

Work is to start this month on a 7½-mile motorway to enable traffic to by-pass Stevenage and Knebworth on the A1. At the southern end the motorway will leave a point in Welwyn near the Clock junction where a roundabout will be constructed. The road will pass to the west of Woolmer Green, Knebworth, Broadwater and Stevenage to Coreys Mill near Graveley, where there will be a roundabout and links with both A1 and A602, the Hitchin Road.

French Motorways

The French Ministry of Transport, which has announced the building of a total of 2,190 miles of motorways throughout the country, has now made known in which order they are to be built. The programme is split up into three orders of priority. The first consists of roads from Paris to Marseilles, one along the French Riviera, routes from Paris to Belgium via Lille, from Paris to Normandy, from Paris to Chartres, from Thionville to Nancy via Metz and from Strasbourg to Basle, a coastal road along the Basque seafront and relief roads for Paris. The second set of projects consists of roads from Narbonne to Orange, from Lyons to Chambéry, from Chartres to Tours via Le Mans, from Lille to Dunkirk and from Lille to Tourcoing. The third programme foresees motorways from Tours to Poitiers, from Bordeaux to Narbonne, from Aix to Fréjus, from Changry to Langres, from Strasbourg to Zabern, from Grenoble to Geneva and from Mulhouse to Monbéliard.

Reconstruction of Temple Mills Bridge

Temple Mills Bridge at Eastway, on Hackney Marshes, is to be rebuilt. This bridge carries Eastway and Ruckholt Road, its continuation leading to Eastern Avenue, over the River Lea. It has a carriageway only 18 ft. wide and during the evening peak period traffic averages 2,300 vehicles per hour.

High Cable-Car System

A very high cable-car system has recently commenced operating in the Andes of Venezuela, some 200 miles to the west of Caracas. The line climbs to a height of 15,600 ft. from the city of Mérida to Espejo Peak. The first section covers over two miles and is also claimed to be one of the longest in the world.

Birmingham Canal Event

For the first time for many years a steamboat appeared recently in the centre of Birmingham when the 62-year-old *Puffin* passed through the Gas Street basin en route from Pershore to the Grand Union Canal. Now a four-berth cruiser, she was manned by three members of the Lower Avon Navigation Trust.

G.E. Diesel Locomotives in U.S.A.

The American General Electric Company plans to enter the domestic diesel-electric locomotive market with production of a 2,500-h.p. locomotive on four axles. Although General Electric has been involved in various parts of locomotive production for 68 years, including their manufacture for export, it has never sold diesels for use in the United States.

No End to Ceylon Troubles

The Ceylon Transport Board has had to obtain an overdraft of Rs.6 million from two commercial banks as it did not receive the normal loan from the Government, which fell due in the last quarter of 1959. This was because Parliament was dissolved and Parliamentary sanction was necessary for the payment of the instalments. Then the new Government was also defeated.

Car-Sleeper between North-East and Dover

The railway car sleeper services between Newcastle—York and Dover—Boulogne, which have proved so popular with visitors to the Continent, are now available for use by car owners travelling to and from Dover only. This new facility will be of particular interest to motorists who would normally drive the long journey south to holiday in the Ramsgate, Dover or Eastbourne areas.

Start on London No. 1 Road Projects

The programme for the reconstruction of the Marble Arch and Hyde Park Corner junctions was announced last week. The two projects will run simultaneously and take about 2¼ years to complete. Work started this week after months of preliminary borings, etc. The escalator shaft at Hyde Park Corner Underground station has been fitted with strain gauges to check any deformation caused by the construction of the twin underpasses, which will run either side of it. Temporary Underground entrances will be erected; ultimately new ones will have to be built.

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HELIPORT TRAFFIC

COMMENTING on the financial results of the British Overseas Airways Corporation for the year ended 31 March, 1960, Sir Gerard d'Erlanger, chairman, said last week that although final details were not yet available, provisional figures indicated that B.O.A.C., on its own operations, made the highest operating profit in its history, amounting to over £4 million. After payment of interest (i.e. our guaranteed dividend) of £4 million a clear surplus remained on B.O.A.C.'s operations alone of approximately £100,000, which compared with a deficit last year on the corporation's own operations of just over £2 million. This improvement of close on £2¼ million was most encouraging. He was also glad to say that although in the year which has just closed the associated companies incurred a deficit of about £1.1 million after payment of interest, this was also nearly £2 million better than in the previous year. Altogether, therefore, there has been an improvement overall of over £4 million in the net results of the corporation and its associates in 1959-60 compared with 1958-59, in which year the deficit, after charging interest, was over £5 million. In 1959-60 the increase in capacity of B.O.A.C. compared with 1958-59 was 29 per cent. The increase in its carryings in the same period was also 29 per cent compared with the figure for the foregoing year. The increased capacity it would be offering on our routes in 1960-61 was 42 per cent compared with 1959-60. In the current year revenue should improve considerably with the introduction of Boeing 707s, equipped with Rolls-Royce Conway engines, on the Atlantic routes. Moreover, it anticipated a substantial increase in traffic as a result of the big cuts in air fares on a very wide range of services during 1960-61. In addition, costs and break-even load factors were being substantially reduced in an encouraging manner.

Royal Britannia

H.M. Queen Elizabeth the Queen Mother will fly in a B.O.A.C. Bristol Britannia from London to Salisbury, Rhodesia, on May 10. During her tour of Rhodesia and Nyasaland the Queen Mother will open the £100 million Kariba Dam.

Problems and Prospects

Mr. Peter G. Masefield, immediate past president of the Royal Aeronautical Society, is to present a paper "Problems and Prospects of Air Transport" to the Royal Society of Arts on Wednesday, May 25, at 2.30 p.m. Sir George Edwards, managing director of Vickers-Armstrongs (Aircraft), Limited, will preside. Applications for tickets should be addressed to the secretary of the Royal Society of Arts, John Adam Street, W.C.2.

First Year of Westland Heliport

The Westland Heliport in Battersea, London, completed its first year of operations on April 23, 1960. The volume of traffic using London's only heliport was more than six times greater than was predicted before the official opening last year, averaging 38 movements each week. The year's total of 1,961 movements was achieved with 100 per cent safety—there have been no accidents whatever. As already recorded, to stimulate traffic and encourage new users the hours of availability have been increased, and landing fees for helicopters using the heliport more than once in a day have been cut. Since the granting of a night flying licence on February 25 this year it has been possible to use the heliport at any hour of the day or night—subject to advance notice outside normal hours, and this facility has already been used a number of times. During the first six months Service and Ministry requirements accounted for 12 per cent of all flights, but the figure for the second half of the year was 34 per cent.

Fares Too Low

American Airlines recently reported a net loss of $453,000 for the quarter ended March 31, 1960, which included a gain (net after tax) of $464,000 from the sale of property. For the quarter ended March 31, 1959, the total net loss amounted to $848,000, when there was a gain of $1,129,000 (net after tax) from the sale of property. During the first quarter of 1959 the revenues of American were adversely affected by a strike. It is estimated that had this strike not occurred, revenues would have amounted approximately to $79,000,000. On the basis of this estimate for 1959, the increase for 1960 approximated 22 per cent. Mr. C. R. Smith, president, pointed out that in spite of substantial increases in gross revenues the results for the first quarter reflect a loss. "Airline fares are too low," Mr. Smith said, "and they should be promptly increased, in accordance with the recommendation made by the examiner for the Civil Aeronautics Board." During the first three months of 1960, American Airlines carried 2 million passengers a total of 1,444,800,000 revenue passenger-miles. This represents an increase of 39 per cent compared with the 1,037,500,000 revenue passenger-miles for the same period last year. American Airlines carried 27,188,000 ton-miles of air freight in the first quarter of this year—an increase of 31 per cent over the same period last year.

F.A.A. Certifies Allison Turboprop Convair

The new Allison turboprop Convair has been certified for commercial service by the U.S. Federal Aviation Agency. Approval by the F.A.A. concluded a 15-month evaluation programme and 345 hours of flight and certification testing. The three aircraft utilised in the flight evaluation programme were the YC-131C, military prototype of the Allison turboprop Convair, and the first two aircraft off the conversion line. Conversion of the Convairs involves removal of the original piston engines and installation of Allison turboprop engines and Aeroproducts Turbo-propellers. The first F.A.A. flight on production aeroplane No. 1 was made on February 18, a month following the initial flight of the aircraft. F.A.A. function and reliability flight tests were completed on April 9. The Allison Turboprop Convair cruises at 350 m.p.h.—80 miles an hour faster than the original machine. Block speeds are increased 25 to 30 per cent, and rate of climb at sea level is tripled—approximately 4,000 ft. per minute. Certified at a maximum take-off weight of 53,200 lb. at a minimum field length of 4,180 ft., the aircraft has an approved maximum landing weight of 50,670 lb. This compares with an F.A.A.-approved take-off weight for piston-powered Convair 340s of 47,000 lb. on a 4,650 ft. minimum runway and a landing weight of 46,500 lb.

A BULK LIQUID HAULAGE ANNIVERSARY

Herbert H Crow

Mr. HERBERT H. CROW, M.Inst.T.

• • • • • •

Chairman and managing director of the Crow Carrying Co., Limited, a haulage business operating road tankers, which this week celebrated its fortieth birthday and in which, despite its size, the personal touch has been jealously retained, Mr. Herbert Howard Crow is Junior Warden of the Worshipful Company of Carmen. Educated at the City of London School, Mr. Crow subsequently entered the family tar distilling business at West Ham—this had been founded in 1862. His father, Mr. Latimer Crow, commenced the road haulage business in 1920, having found his earlier retirement from business uncongenial, and the company was registered in June, 1920. Operations were initially carried on from the family house at South Woodford, but later Barking was selected as the venue of the company's headquarters. There is also a flourishing branch at Manchester and on the average day Crow vehicles are well distributed over the country. Mr. Crow's chemical knowledge was of special value in the building up of the bulk liquid haulage side of the business. Today the Crow premises at Barking, which were visited last week by a party of Institute of Transport members participating in the London Congress, represent the results of a far-sighted postwar building programme. Indicative of the emphasis laid upon good staff relations within the organisation is the fact that social gatherings, which were initiated in 1926, have been annual affairs since 1934. Mr. Crow has served a number of times as a member of council of the Institute of Transport, and occupied the office of hon. librarian during 1953-56; he is now a vice-president. He was elected a vice-chairman of the Road Haulage Association in 1956 and is a past chairman of both its Metropolitan and South Eastern area and of its Central London sub-area. In 1957 he was appointed a member of the transport panel of the Transport Tribunal. A strong believer in the virtues of local industry, he is a past-president of the Barking Manufacturers Association and of the Rotary Club of Barking.

IN PARLIAMENT

Air Transport Licensing

BILL GIVEN THIRD READING

THE third reading of the Civil Aviation (Licensing) Bill took place in the House of Commons on April 28 immediately following the conclusion of the committee stage. The purposes of the Air Transport Licensing Board were amended slightly by the insertion of the words "with the general duty of furthering the development of British civil aviation." The Opposition had wanted this elaborated further to afford protection to the two airways corporations, but this was not accepted. Among the points to which the Board must have regard is "existing or potential need" instead simply of "need" when considering applications and it is also to be required to present an annual report to the Minister of Aviation which he, in turn, will lay before Parliament.

In the debate on the third reading MR. G. CHETWYND, for the Opposition, returned to the regrets it felt that more had not been done to protect the position of the corporations and urged the importance of introducing the safety provisions as soon as possible. This line was followed also by MR. J. DIAMOND, who went to the lengths of maintaining that the Bill was a warning to those with responsible positions in the corporations that they should look for more attractive jobs elsewhere. On the Government side MR. S. R. MCMASTER was very optimistic, largely it seemed on the grounds that the manufacturers were certain to benefit most from the strong, sturdy independence that the Bill would engender.

Government Reply

Replying to the debate the Minister said that the Opposition could accept the assurance which he had given, which, at any rate, reflected his own view, that the corporations represented a very important element in our aviation and would continue to do so, and that it was in the interests of everyone in the country that they should continue to be the main flag carriers of the British air mercantile fleet. The Bill would alter the arrangements for licensing, and he would like to take the opportunity to express his thanks and those, he believed, of the whole House to the Air Transport Advisory Council and its Chairman, Lord Terrington, because the Council has been doing this job for a long time without adequate powers and it was primarily due to the Council's wisdom and judgment, and that of its Chairman, in particular, that it was discharging these duties with such success and to such general satisfaction.

He did not know what the membership of the Board would be, although, naturally, he had given the matter some thought. He was sure that the new Licensing Board would administer the Act in a manner which would be fair and equitable to all operators, whether they be corporations or independent. He believed that there was room for all.

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T.R.T.A. DINNER

Vital Delivery Systems

ON Monday of this week the Traders' Road Transport Association held its fourteenth annual dinner, with Mr. S. C. Bond, the president, in the chair, supported by a record gathering of members and guests. Mr. N. C. MacDiarmid, chairman of the Council of Iron Producers, proposed "Her Majesty's Ministers" and began by congratulating Mr. Bond on his award of the C.B.E. The question of road and rail had to be tackled as a whole and called for rethinking on a fundamental scale, he said, free from a parochial approach or with the bias of vested interest. He assured the principal guest, Mr. Ernest Marples, that negative or restrictionist policies would not be in the interests of traders, who must remain free to exercise their choice of transport.

They needed to keep a wary eye on costs and hence bans on loading and the general attitude of the House of Commons on the second reading of the Road Traffic Bill gave rise to anxiety; there was a hint that commercial vehicles were felt to be a nuisance and should deliver only at night. It was illogical to regard traffic flow as an end in itself. Increased cost of delivery so incurred would be reflected in a rise in commodity prices. An attitude of give-and-take was needed; some staggering was already taking place. The delivery system was as necessary in a modern city as the passenger transport system. Their claims must take precedence over private motoring. An efficient system of public transport, he concluded, could lead members to reconsider using their own road vehicles.

Adaptation to Needs of Transport

In his reply, Mr. Ernest Marples, Minister of Transport, said that when he was in civil engineering they used road transport for delivery of heavy machinery because of its certainty. He thought this country would be rebuilt in the long term in accordance with the needs of transport more than anything else. So far we had not thought it out, neither had they in the U.S.A. or elsewhere. That was the reason for the long-term planning section of the Ministry of Transport. In the end they must segregate the cars and heavy vehicles from the pedestrians and cyclists.

His job required reconciliation between a series of competing vested interests. He was trying to avoid the mistake of the generals—fighting the present war on the lines of the last one—and he was therefore taking note of the Hovercraft. But in the short-term they must make the best of the existing streets. However efficient they were the numerous authorities over metropolitan highways could not produce results for through traffic. Rules for drivers must be simple and clear, and then enforced, if they were to avoid a self-regulating shambles. Moving traffic must be given priority, short-term parkers accommodated at meters and long-term parkers put off the streets. The pink zone was a success but was on too small a scale. He thanked the Association for its co-operation and looked forward to making a series of useful experiments in his endeavours to cope with traffic.

Mr. S. C. Bond, in proposing "The Guests," suggested that for the urgent needs of road making we had the men and the materials; only the money was missing. Could that not be supplied by a public loan issue? Was it not worth while to work day and night on road schemes so that the Hyde Park rearrangement, for example, could take less than 30 months to complete? The response was by Viscount Brentford, chairman of the Automobile Association, who commended the "Kerb Space is Precious" campaign of the T.R.T.A.

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LETTERS TO THE EDITOR

First-Class Accommodation

The Editor is always glad to receive letters from readers on subjects germane to the transport industry, but these should be written as concisely as possible. The opinions expressed therein must not, however, be regarded as having editorial endorsement. Where correspondents desire to use a nom-de-plume it is essential that the Editor should be informed of the name and full address of the writer as indication of good faith.

SIR,—Is there no way in which the Southern Region can regularise the present unsatisfactory position as regards first-class travel? First of all, the early-morning trains on the Brighton line rarely if ever see a "jumper." It is no uncommon thing to find workmen, supremely comfortable in shag-fugged first-class compartments, every seat taken either by a dungareed cheap second-class ticketholder, or his hobnailed boots, while coaches of second-class accommodation travel empty.

On the return trains from London in the evening it is a safe bet that on the rare occasions when tickets *are* clipped in transit, half the first-class occupants only hold second-class tickets—and here's the rub—a first-class ticket holder still has to remain standing in the corridor if the second-class passenger already in occupation proffers the excess fare!

Taking a Chance

Surely if these inveterate bilkers intended to occupy first-class seats they should have called at the booking office first, but obviously they find it cheaper to take a chance, as long as the present slackness in ticket examination prevails, and presumably the railway authorities are quite prepared to accept the first-class increment twice over for the same seat.

On the Continent they do things better—if one wants a superior class of accommodation it is paid for in advance—without the option—and in all equity the same position should obtain here.—Yours faithfully,

J. C. SELFE.

194 *Brighton Road,*
Coulsdon, Surrey.

Preservation of Leeds 602

SIR,—In the November 14, 1959, issue of MODERN TRANSPORT you published an appeal, by the 602 Preservation Society for funds to buy the P.C.C. all-electric railcar No. 602 from Leeds City Transport. Although we still require further funds for future maintenance and repainting, we have been fortunate in raising sufficient cash to be able to purchase the car, and it will be taken to the Tramway Museum at Crick in Derbyshire within the next few weeks. Through your columns, I would like sincerely to thank those people who contributed to the society, thus helping to make the acquisition of the railcar possible.

If any readers have queries about either the society or the car I will be pleased to hear from them and to supply the information; in order to keep the expenditure of the society to a minimum, a stamped addressed envelope will be greatly appreciated.—Yours faithfully,

M. R. GILKS,
Hon. Treasurer,
602 Preservation Society.

104 *Sandringham Drive,*
Leeds, 17.

Middleton Colliery Railway Tablet

SIR,—In commemoration of the bicentenary of the Middleton Colliery Railway (1758-1958), the Railway Correspondence and Travel Society is proposing to erect a tablet on the site of the coal staithe which formed the city terminus of the line in Great Wilson Street, Leeds. The anticipated cost is approximately £60 and all donations towards this amount will be gratefully received by Mr. W. Bottomley, R.C.T.S. Middleton Tablet Appeal Treasurer, 18 Greencliffe Avenue, Baildon, Shipley, Yorkshire, and will be acknowledged individually. Should more money be received than is required, any surplus will, in the absence of contrary instructions, be handed to the Middleton Railway Preservation Society, which, in conjunction with Leeds University Railway Society, is hoping to re-establish part of the line as a working historic relic. In the event of the erection of the tablet proving for any reason impossible all monies will be returned to the donors.—Yours faithfully,

J. C. W. HALLIDAY,
Chairman,
West Riding Branch, R.C.T.S.

The Plains,
Calverley, Pudsey,
Yorkshire.

The telephone number of Leyland Motors, Limited, is now Leyland 21400, not Leyland 81400 as previously.

The number of General Motors Corporation shareholders has passed 800,000, which is said to be the largest shareholder ownership of any industrial corporation in the world.

★

FORTHCOMING EVENTS

Until May 13.—Mechanical Handling Exhibition. Earls Court, London.

May 10.—Inst.T. (Leeds G. and S.). Annual general meeting. Leeds City Transport Dept., 1 Swinegate, Leeds, 1. 7 p.m.
A.F. F. Beswick. "Current Problems and Trends of Commercial Aviation." Imperial Hotel, Elizabeth Street, S.W.1. 7 p.m.

May 11.—Inst.P. C. M. Vignoles, "Petroleum People—Planning for Tomorrow." 61 New Cavendish Street, W.1. 6 p.m.
L.R.T.L. B. J. Prigmore, "Tramways from the I.E.E." 153 Drummond Street, N.W.1. 7 p.m.
B.I.R.E. J. Shayler, "Radio Guidance in the Automatic Landing of Aircraft." London School of Hygiene, Keppel Street, W.C.1. 6.30 p.m.
I.R.T.E. (Western). Visit to Westinghouse Brake and Signal Co., Limited, Hanham Road, Kingswood, Bristol.
I.R.T.E. (Yorkshire). Visit to Dunlop Rubber Co., Limited, Speke, Liverpool.

May 12.—L.R.T.L. F. E. Oldfield, "The Liverpool Tramways." Central Y.M.C.A., Mount Pleasant, Liverpool. 7 p.m.

May 13.—I.R.T.E. (South Wales). E. R. T. Jowett, "Cummins Diesels." South Wales Institute of Engineers, Park Place, Cardiff. 7.15 p.m.

May 14.—L.R.T.L. C. W. Routh, "The Tramways of Leeds." Engineering Centre, Stephenson Place, Birmingham. 2.30 p.m.
P.W.I. Visit to new Ilford carriage depot.

May 15.—O.S. Visit to City of Oxford Motor Services, Limited. 2.30 p.m.
N.T.R.M.C. Portsmouth trolleybus tour.

May 17-20.—Public Transport Association. Conference at Scarborough.

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NEW W.R. MARSHALLING YARD AT MARGAM

Fully Automatic Operation

2—SIGNALLING, POINTS AND RETARDERS*

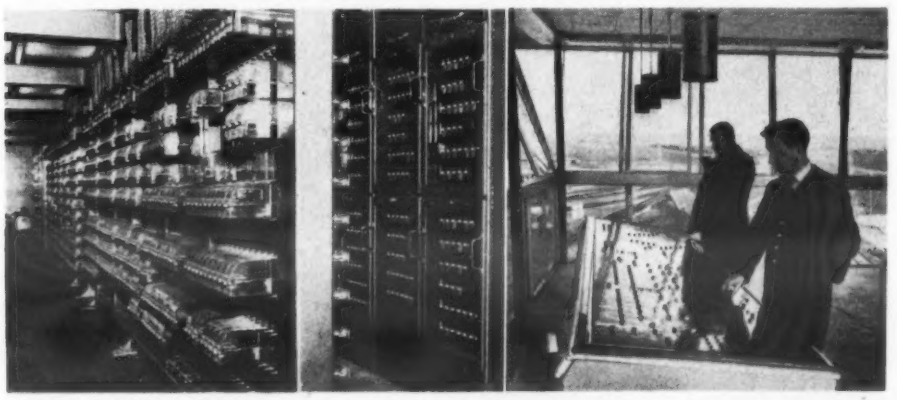
THE main amenity block at the new Margam yard is placed near the hump and contains offices for the yardmaster and his staff and stores accommodation at ground-floor level, and on the first floor a fully equipped kitchen and a mess-room. The building has a reinforced concrete frame-work with brickwork cladding to match the control tower. Provision has been made for a future depot for servicing diesel locomotives and the formation work has already been carried out. To meet operating requirements the Ogmore Valley Extension Line has been doubled by widening the existing

On the occasion of the opening of the Margam yard by Mr. K. W. C. Grand on April 11: Mr. J. R. Hammond, general manager, Western Region; Mr. R. F. Hanks, chairman, Western Area Board; Lord Brecon of Llanfeigan, Minister of State for Welsh Affairs, and Mr. Grand

embankment and extending several culverts. A new 110 ft. span bridge on piled foundations with welded girders and prefabricated deck units carrying the new tracks over the main line has been constructed. Road access to the site has been provided at the east end of the yard from the Port Talbot—Porthcawl Road (Water Street) and a new tarmac road links the amenity blocks with the control tower, passing under the hump summit. Marram grass will be planted on a bare dune outside the yard boundaries to prevent wind-blown sand from invading the area of the yard.

Yard Operation

When a train has arrived in the reception sidings, examination by the carriage and wagon examiner is carried out and a shunter walks along the train to divide it into "cuts." At the same time the shunter uses a lightweight portable radio transmitter to pass information to the traffic office in the control tower concerning the siding destination of each cut and the number of wagons in the cut. In the traffic office, this information is set up on a reperforating teleprinter which causes a perforated paper tape to be produced in code.



At the left of this relay room view are 1,200 signalling relays and on the right some of the 2,000 retarder and automatic point setting relays can be seen; right, the control panel

Simultaneously a copy of the information is produced on three page printers located at the control panel, in the office of the sorting sidings inspector (at the west end) and the office of the Steel Company of Wales' checker. When a train is about to be humped, the appropriate perforated tape is selected and fed into a tape reader in the traffic office.

Signalling

The signalling associated with the reception sidings, the up arrival and up departure lines, and movements at the east end of the sorting sidings, is operated from a control panel of the mosaic type, located in the operating room on the top floor of the control tower. The new junctions in the main lines at the east end are signalled by means of a local relay interlocking, remotely controlled on the "entrance-exit" principle from a mosaic type panel in the signal box at Pyle West. At the west end of the sorting sidings movements are controlled from a new signal box having a mechanical lever frame.

A panel of the mosaic type is also being provided in this signal box to control movements to and from the Margam Abbey sidings, and on the associated goods lines. The arrangements permit the yard to accept and receive traffic in each direction and can thus deal with main-line freight trains from the Cardiff direction and those which avoid Cardiff on the Vale of Neath line. It will receive coal trains from the Tondu area via the Ogmore Valley Extension and also local works and goods depots. A secondary sorting yard is provided to the west of the site for quick exchange of marshalled groups of wagons between express freight trains which at present call to detach at small yards in the Swansea district. This will give full loads to one or two destinations, save time and mileage and reduce the work in the smaller yards.

The control panel is accommodated on the top floor of the control tower, and is of the mosaic type built up of units 40 mm. square containing key switches, push buttons or indicating lamps as required. The right hand portion controls the signalling of the reception sidings and associated tracks on the entrance-exit principle, a key switch being used at each signal position at the entrance to a route, and a push button at the exit, to select the particular route required. On a route being set up, the points are automatically set to the required position, after which the representation of that route on the panel is lit by a line of white lights and the signal is cleared. An indication of the signal aspect is given by a red or green light, only one aperture being used on the panel for either colour. As the train enters the route, track occupancy is indicated by the section of route indication lights being changed from white to red. The points are normally operated from the route setting controls, but emergency switches are provided at the top of the panel whereby they may be thrown individually if desired. Associated with these switches are normal and reverse indication lights, and a red light showing when the points are locked. The usual approach locking and route locking, with time releases where necessary, are incorporated in the controls.

The left hand portion of the panel controls all equipment associated with humping operations. Each retarder is normally under fully automatic control as described later, but switches are provided to give semi-automatic or direct manual control. Each retarder has two switches, one marked A, O, L, M and H, which refer respectively to "automatic," "open," "low pressure," "medium pressure," and "high pressure," the three fixed pressures being used for direct manual control in case of emergency. With the first switch in position A, a second switch is brought into operation, this being marked C, 1, 2, 3, 4 and 5, giving fully automatic operation at computed speeds, or semi-automatic operation at one of five pre-set release speeds.

Point Operation

The points are normally operated automatically from the route storage associated with each cut as described below, but individual switches are provided to allow for an over-riding manual control when required. The lie of points is indicated on this section of the panel by a white light in the appropriate part of the track representation, and track circuit occupancy is indicated by a red light, one per track circuit. A special switch is also provided on this portion of the panel for the control of the humping signal. Except in the case of some points which conflict with both sections of the panel, all points remain in the position in which they were last used, until called to a different position by the setting up of another route or by the operation of the individual control switch. The points from the hump summit to the sorting sidings and also those in the reception sidings and associated tracks, are operated by electro-pneumatic cylinders working at a pressure of 40 lb. per sq. in., and can be thrown from one position to the other in half a second.

When a train is about to be humped, the appropriate perforated tape will have been fed into the tape reader. On depressing the push button marked "start tape" on the control panel, the tape reader translates the siding destination and number of wagons of the first four cuts into electrical signals which are fed into storage units, with the destinations indicated on the control panel. As the successive cuts pass over the "king" points these indications move up, and the tape reader then translates the information concerning the next cut and transfers it to the vacant storage. Facilities are provided for cancelling or correcting the destination of any of the four cuts displayed. The setting of points for the successive routes is governed by track circuits. A separate track circuit is required for each set of points, and intermediate track circuits between the points are also required. Each track circuit is short enough to reduce to a minimum the space which must be maintained between cuts, but is longer than the maximum wheel base of any wagon that is to use the automatic point setting system.

Retarders

The retarders are operated by electro-pneumatic cylinders working at pressures up to a maximum of 100 lb. per sq. in. They are designed in articulated 12-ft. sections. Each primary retarder is 72 ft. long and is provided with two sets of control valves so that either the first or second half can be operated independently. The secondary retarders are 36 ft. long and have one set of control valves each. Each is supported on a timber cribbage mounted in a well-anchored concrete pit which prevents movement of track due to the large amounts of kinetic energy arrested. In the case of the secondary retarders, the concrete pits have been made sufficiently large to allow for a possible future lengthening to 48 ft.

The speed at which a wagon should leave the secondary retarder in order to buffer up to wagons already in the siding at less than 4 m.p.h. depends on several factors: The distance to run equals distance to clearance point between sidings plus available standage space in siding; then there

(*Continued on page* 14)

* No. 1 appeared April 23.

A new AEI contract covers the electrical equipment for 113 motor coaches, 60 driving trailers and 276 trailer coaches for South African Railways. A total of 350 motor coach equipments have now been ordered from AEI by S.A.R., and no fewer than 345 electric locomotives have been ordered from AEI by the same customer

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New G.E.C. 50-Cycle Locomotive

(*Continued from page 3*)

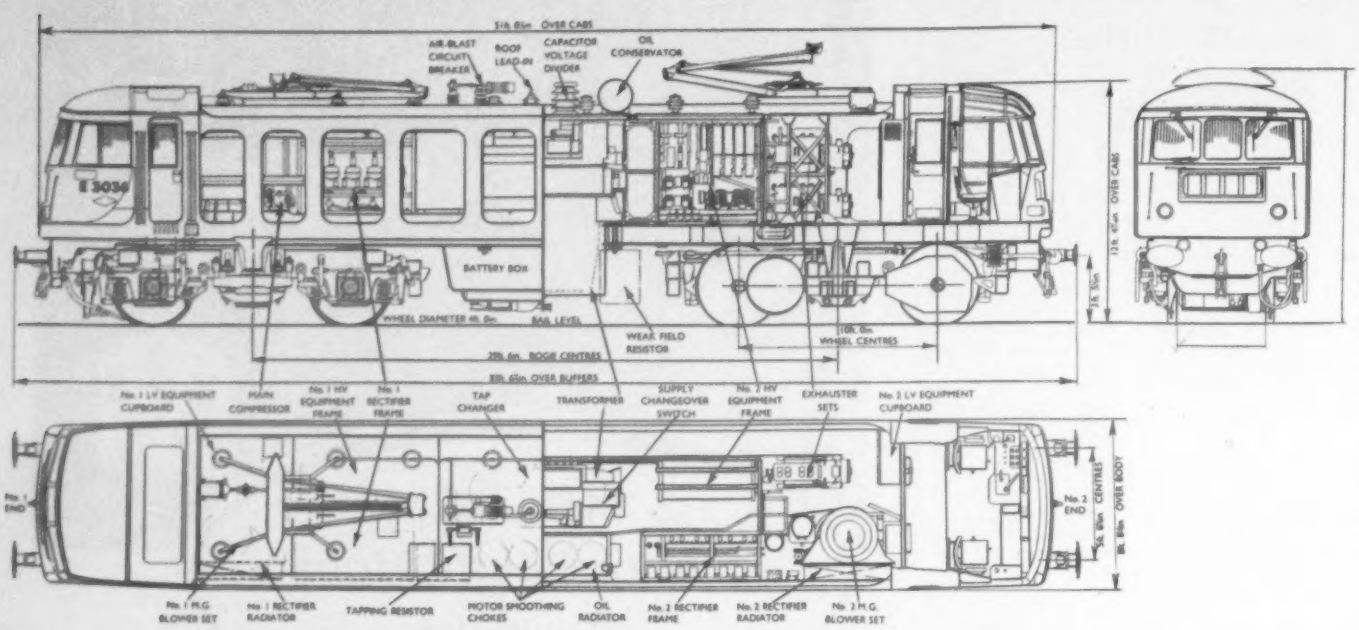
r.p.m.; one-hour rating 890 h.p. 875 amp. 850 volts 1,100 r.p.m.

The motors are mounted through rubber pads in the bogie frame, and have fabricated frames to which are bolted the hubs of the Brown-Boveri spring drives which accommodate the relative movement between motor and axle. The motors are supported in the bogie frame by two brackets on the motor frame and an arm extending from the hub of the Brown-Boveri drive, forming a three-point mounting.

The drive comprises a 5 deg. single-helical reduction gear with a ratio of 25 : 74, the large wheel of which is mounted on a quill shaft carried in roller bearings in the drive hub. In the face of the gear a ring of spring-loaded pads engage with face dogs integral with a spider pressed on the road wheel hub. The drive is thus torsionally flexible and the axle is free to move vertically inside the quill shaft. Oil bath lubrication is provided.

The driver's cab at each end of the locomotive follows closely the size and layout established by the British Transport Commission and approved by the railway unions, with minor adjustments dictated by the constructional methods adopted. Fully adjustable seats are provided for driver and assistant driver at the full-width desk, and draught screens behind each seat extend the full height of the cab.

A double-skinned roof, packed with insulation, is provided and the steel framing of the cab front and the robust construction of the desk are designed to give a measure of collision protection to the crew. Electric heaters are fitted alongside and behind each seat and in the vestibule, and the windows are glazed with Therglass screens for electric demisting. These screens are of laminated glass with a fine wire matrix, invisible to the naked eye, incorporated in the laminations.



General layout of the G.E.C. 25,000-volt 50-cycle locomotive for British Railways

Main Frame and Superstructure

The main frame base and body framing are formed entirely of thin steel plate as an integral structure. This design, which is the result of considerable stress analysis and investigation, eliminates all unnecessary material and weight, and provides a carefully proportioned and distributed stress throughout the complete structure. The base is a full-width shallow box section and is curved round and upwards to form the bases for a series of vertical pillars. Corresponding sections of the cant rail are curved downwards to form the top junctions of the pillars. Large radii are used to avoid stress concentration, and in effect each of the body sides forms a Vierendeel truss.

In the central portion of the width, the top deck is raised and the bottom plate lowered to increase the depth of the box section. At the pillar locations, box-form webs extend between the top and bottom decks of the main-frame base, and the two decks are also tied and reinforced by a number of longitudinal webs. The vertical members at the location of each cab rear bulkhead, and at the front door pillars, are curved over to form the roof arches. These are tied together and deep side-gussets transfer a proportion of the buffing loads evenly through the structure to the body side-frames. The drag boxes, which are fitted with B.R. standard draw hooks and screw couplings, are arranged for the later installation of automatic central couplings, and are fitted with oval-headed hydraulic buffers. The complete frame has been designed to withstand a standing and buffing load of 200 tons without overstressing any part. Strain gauge tests carried out on one of the frames have successfully demonstrated its ability to meet these requirements.

Between the cabs, the roof is removable in five sections to allow for the lifting out of main equipment for overhaul purposes, the roof skin of aluminium alloy being attached to a light steel framework. Four half-drop windows are fitted on the corridor side of the body, with two fixed windows on the other side for illumination of the h.v. compartment. The outer skin of cold-rolled full-finish steel sheet is welded to the body side-frame members

Bogies

The four-wheel bogies are of the swing bolster type, with welded box-frames fabricated in ⅜-in. steel plate. The weight of the superstructure is transferred to the bogies through four pillars which extend from the locomotive main frame to the bogie bolsters. These pillars, two at each bogie, are located centrally between the wheels in the longitudinal plane, and outside the centre lines of the journals in the transverse plane. The pillars terminate on spherical pads located in spherical seatings to which manganese-steel plates are welded. The plates in turn slide on manganese-steel plates bearing on the bolsters, the complete assembly being immersed in covered oil baths.

Traction, braking, and transverse forces are transmitted by steel king-pins, attached to cast-steel centres which in turn are welded to the main frame. Each pin sits in a rubber-bonded steel bush fitted to the bogie bolster. The thrust point is arranged below the axle level to minimise weight transfer. Traction and braking forces are transmitted from the bogie to the bolster by rubber-bushed traction links.

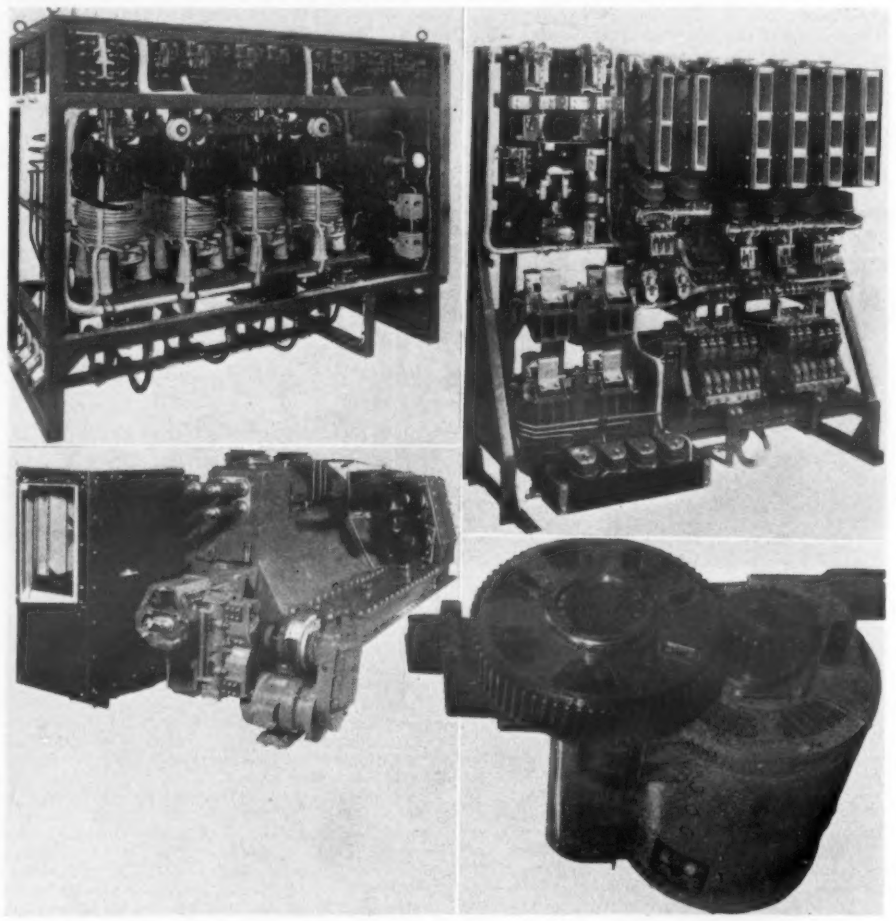
Bogie Springs

The vertical load on the bolster is transferred to the bogie via two double-coil springs at each end of the bolster. The springs seat on a bracket suspended from the bogie by spring links fitted with rubber-bonded hemispherical pads. In addition to the cushioning of vibration these also assist in centralising the bogie after negotiating a curve. Movement of the bolster springs is controlled by hydraulic dampers anchored to the spring link brackets and to the top of the bolster. Lateral sway is checked by swing links and rubber dampers.

The bogie frame is supported on double-row roller-bearing axleboxes by two nests of coil springs at each end. The springs are rubber-cushioned at each end and attached by links to a compensating beam resting on the axlebox. Manganese-steel-faced guide liners are bolted to the frame to facilitate replacement. Rolled-steel wheels and tyres are fitted.

Brakes

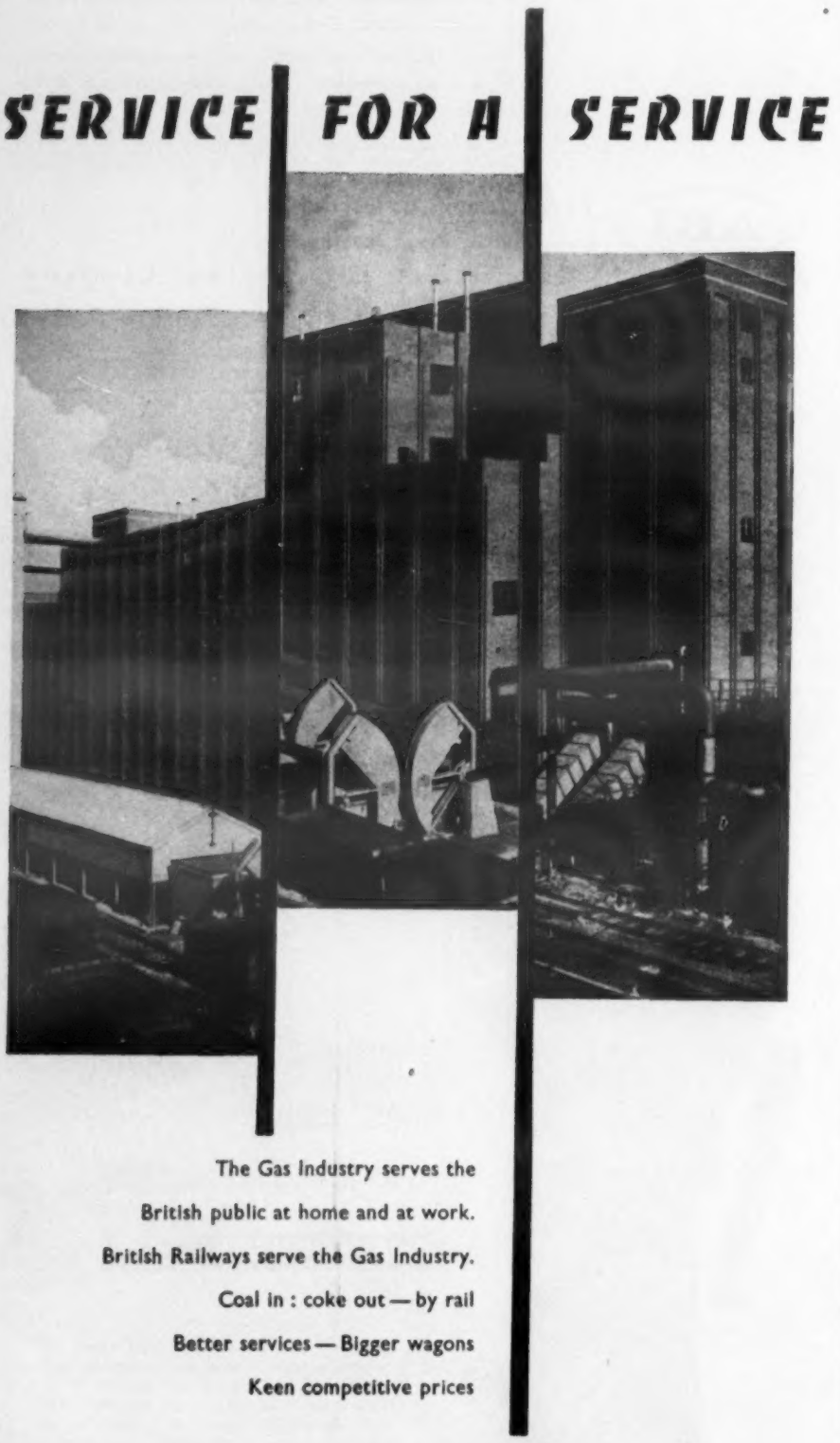
The brake equipment provides air braking on the locomotive and vacuum braking on the train. When hauling vacuum-braked stock, the locomotive air brakes are controlled by the driver's vacuum brake valve. The equipment is arranged for the hauling of fully braked, partially braked and unfitted stock; 8-in. diameter brake cylinders, one for each wheel, are mounted externally above the axleboxes, and operate through clasp brake rigging with automatic slack adjusters.



Details of 50-cycle locomotive for British Railways by G.E.C.; Com-Pak rectifier units; one of the main equipment frames; below, the h.v. tap-changer unit; and, right, traction motor and Brown-Boveri drive

Air is supplied to three main reservoirs with a total capacity of 9 cu. ft. by a motor-driven air compressor, while vacuum for the train braking is provided by two exhausters. These run at slow speed for maintaining vacuum and are speeded up for brake release. Provision is made for the running of one exhauster off the battery for limited periods while traversing dead sections in the overhead line. The hand brake in each cab operates through the power brake rigging on one pair of wheels on the adjacent bogie.

Anti-slip braking is provided under the control of pushbuttons on the drivers' desks, to give a limited brake application so as to reduce the tendency to slip under poor adhesion conditions. Sanding is provided for the leading wheels of the front bogie in each direction of travel, the sand-boxes being incorporated in the cab structure, with filling doors in the cab sides. It is, however, expected that the use of sand will be unnecessary in view of the electrical characteristics of the scheme, which limit the tendency to uncontrolled wheelspin, and the provision of anti-slip brakes.



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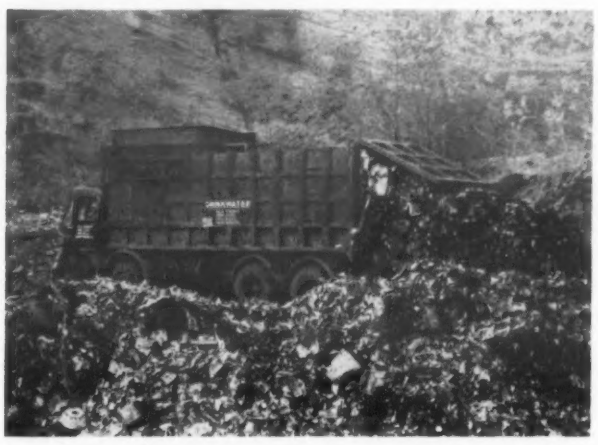
ROAD VEHICLE INDUSTRY

Commercial Vehicle Production and Exports

PRODUCTION and exports of British commercial goods and passenger vehicles again showed some increases during the first quarter of 1960, according to recently issued Board of Trade records. Goods vehicle production, at a weekly rate of 8,455, totalled 109,914 for the three months, compared with a weekly rate of 5,852 and a total of 76,070 for a similar period of 1959 and 100,316 (weekly rate 7,717) for the final quarter of 1959. Comparable total passenger-vehicle figures were 5,000 in 1960, 3,714 in the first quarter of 1959 and 5,140 in the last quarter of 1959. Goods vehicles exported in the first three months of 1960 totalled 34,232 and passenger vehicles 1,371 compared with 27,648 and 1,191 respectively during a similar period last year.

Brighter Light Alloy

WHAT is claimed to be the brightest, most corrosion-resistant aluminium alloy ever made available to the motor and appliance industries has been announced by Reynolds Metals Company, Richmond, Va., U.S.A. Immediate applications for this durable alloy with a mirror-like brilliance are said to cover all interior and exterior trim uses in road vehicles and many uses in the appliance industry. The new material has been named Alloy 5657. It is a high-purity non-heat-treatable metal. It can be formed in all tempers as easily as Reynolds alloy 5457, which is now used widely in the American automotive industry. To compare brightness between the new alloy and alloy 5457, Reynolds metallurgists used the two alloys as mirrors in a series of tests. Results are said to have shown that images were 15 per cent sharper in the new alloy, which is now being mass produced in flat sheet and coil form, in the same dimensions, finishes, gauges and tempers as alloy 5457, with no increase in price.



Tons of rubbish—and this Foden eight-wheeler with Powell Duffryn hopper-loading hydraulic ram body recently added to the Drinkwater fleet, which includes some 40 Fodens is here seen discharging about 11 more tons which the ram manages to compress into the body

Dodge Drivers' Club Formed

WITH the main object of providing practical co-operation between the makers of Dodge commercial vehicles and the men who operate them throughout Britain, a Dodge Drivers' Club has been formed by Dodge Brothers (Britain), Limited. The Dodge ram's head has been chosen as the club emblem and it will be supplied to members in windscreen transfer and lapel badge versions. The club's first president is Mr. Wendell S. Clough, managing director of Dodge Brothers (Britain), Limited, and Chrysler Motors, Limited, while the company's advertising and sales promotion manager, Mr. K. W. Underwood, is national organiser. Benefits derived from club membership include free personal accident insurance, a regular news and information service and a comprehensive membership folder. Membership is free to all Dodge drivers and drivers' mates.

Wakefield Transportable Service Unit

DESIGNED to supply lubricants and air to vehicles kept in the open or away from a service bay, a new transportable unit has been introduced by the Wakefield Castrol Group. Designated Model 28F/B, it is self-contained apart from requiring an electrical supply; it comprises a two-wheeled trolley carrying a 2.7 cu. ft. air compressor driven by belt by a ½-h.p. (cont.) electric motor, a pressure tank, a 28-lb. grease container and a 6,000-p.s.i. grease pump. Total weight of the unit is 2¼ cwt.

G.M. V-8 Diesel Introduced

BRINGING its basic range of commercial vehicle engines to a total of eight, General Motors Corporation truck and coach division, Pontiac, Michigan, has introduced a new V-8 two-stroke diesel engine. Produced with gross output of either 236 or 260 b.h.p., both with a torque of 733 lb./ft. at 1,200 r.p.m., the new units, designated 8V-71, will be installed in three heavy-duty G.M.C. road tractors in 1960. The three models will be 48-in. BBC aluminium tilt-cab designs—one two-axle chassis, one three-axle chassis with conventional leaf springs and one with air suspension, all rated at 76,800 lb. g.c.w. The G.M.C. existing basic engine range comprises V-6 and six-cylinder in-line two-stroke diesels and three V-6, a V-12 and an in-line six-cylinder petrol engines.

B.M.C. Engine Reconditioning

STARTING this month, 3·4- and 5·1-litre diesel engines returned under the B.M.C. exchange engine scheme will be reconditioned at the company's engine replacement plant in Durbar Avenue, Foleshill, Coventry. Once the home of Riley cars, this factory has since emerged as the most modern automobile replacement engine and gearbox producing plant in the world. Current output is in the region of 3,000 units a week and includes the whole range of B.M.C. petrol engines, together with the 2·2-litre diesel. With the addition of the two larger diesel engines—an anticipated 55-60 a week—the diesel range will also be complete. These units have hitherto been reconditioned at the producing plant, Morris Commercial Cars, Limited, Birmingham.

Pressed Steel Expansion

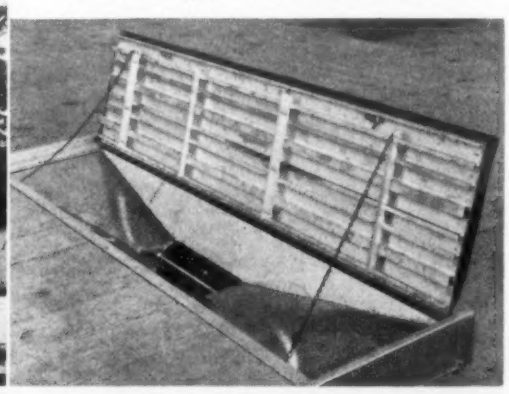
AS a result of the large-scale expansion programme being undertaken by the motor industry, Pressed Steel Co., Limited, is again to extend its motor body making facilities. This will be done by extending existing plant at Swindon and also by the introduction at the Linwood factory, near Glasgow, of large-scale body production alongside the manufacture of railway rolling stock. This will entail in addition to the provision of necessary equipment an enlargement of the existing Linwood factory space. Car body production has already started there and will continue on an increasing scale. The directors are also planning to expand the company's capacity for the manufacture of press tools and a site for that purpose has been acquired on the Simonside Trading Estate.

Nuffield Vehicles at Spanish Shows

DESPITE harsh restriction of the import of complete vehicles into Spain, Nuffield vehicles are popular and are reputed to stand up well to the arduous operating conditions in that country. The Valencia and Barcelona Fairs are two of the rare occasions when import licences are granted and this year, among the three Nuffield vehicles shown at Valencia (May 1-20) by the Madrid distributor, Tremor-Osnur, will be a J2 Minibus, while a Morris-Commercial chassis-cab and a Nuffield Universal DM4 tractor will be shown at Barcelona (June 1-20) by Fial Roca, Nuffield Barcelona distributor.

New Austin 30-cwt. T.200

REPLACEMENT of the popular Type 301 normal-control 30-cwt. goods chassis by a new forward-control vehicle of the same capacity with single rear tyres is announced by Austin Motor Co., Limited. Designated S200, the new chassis has the unique angled-door FG cab already familiar on the 2- to 4-ton Austin range. Either B.M.C. petrol or diesel engines of 2.2 litres capacity are available but in this application power and torque of the petrol engine are raised from 46 to 61 b.h.p. and from 97 to 111 lb./ft. The Austin Series IV 200 2-ton chassis with twin rear wheels introduced at the last Scottish Motor Show remains in production unchanged, but has been renamed T200 to indicate rear twin wheels.



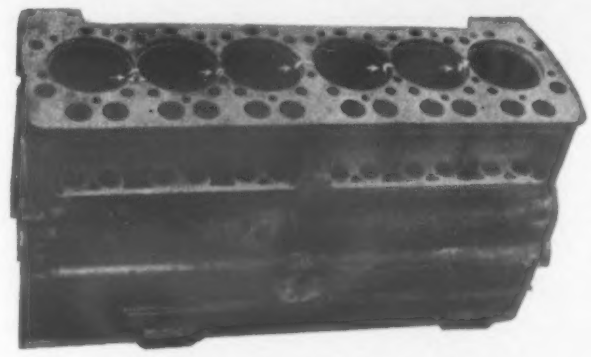
A new Bonallack platform vehicle fitted with detachable hopper and air-discharge equipment for easier delivery of bagged granular and powdered commodities; below, an alternative air-delivery full-width hopper for permanent fitment

Perkins in U.S.A.

WITH headquarters in Detroit, a new company named the Perkins Engine Company Incorporated has been formed in the United States of America, to market the products of F. Perkins, Limited, Peterborough. The new company intends to expand the already substantial sales of Perkins power units in the United States which cover a wide field of application in commercial vehicles, taxicabs, boats and agricultural and industrial equipment. The U.S. company will also provide technical and service facilities for the American and international manufacturers fitting Perkins engines in their products, who include Chrysler, Ford, International Harvester, Hyster and Transicold.

BARIMAR welds ALL DIESEL Engine Parts

Barimar has for many years devoted a special department to the scientific welding of all parts of large and small Diesel engines. Many of these jobs have been sent to Barimar from overseas



The top of every liner housing in this cylinder block was cracked and the repair called for the skill of Barimar experts. Scientific welding and accurate machining by Barimar made a permanent repair at far below the cost of a replacement

The picture illustrates one of the many Diesel engine cylinder blocks used in motor vehicles, received by Barimar for repair. Barimar scientifically welds these blocks with strength and accuracy and returns them promptly to their owners covered by the usual Barimar Money-back Guarantee.

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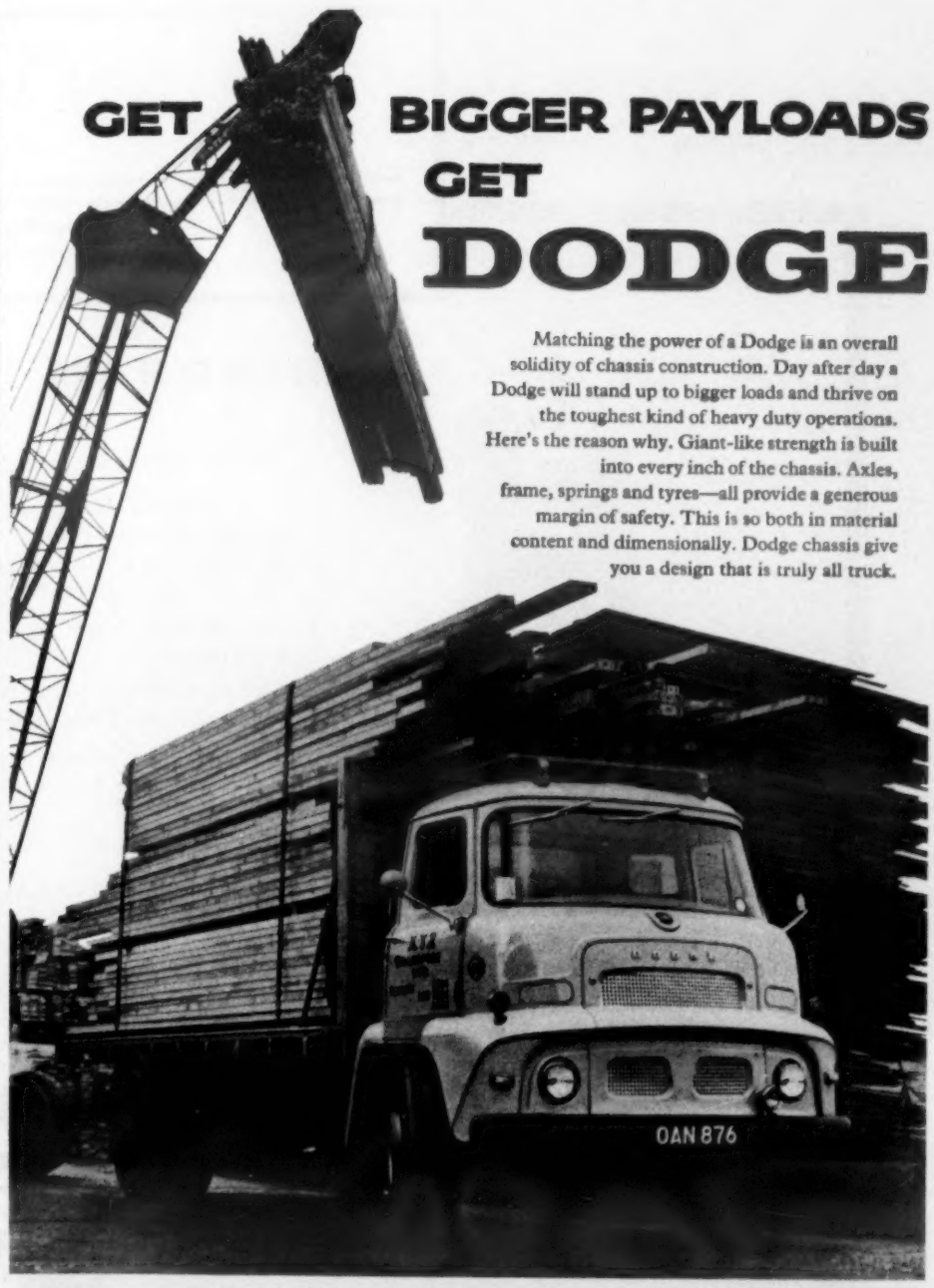

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New W.R. Marshalling Yard at Margam

(*Continued from page 11*)

must be taken into account the rollability of the wagon and the curvature of the track. The standage distance and the rollability of the wagon vary from cut to cut. The other factors are constant for any particular siding. Apparatus is provided immediately in front of each retarder to measure the rollability of each cut as it approaches. This is done by means of two pairs of wheel detectors of the inductive type, operating at supersonic frequency. The signal from each pair is used to operate a high speed binary counter, giving a count inversely proportional to the speed of the cut. As the distance between the pairs of detectors and the gradient are known, an electronic computer is able to produce a voltage representing the rolling resistance of the cut.

Computer Routine

The output of the computer is transformed into digital code form so that it can be passed forward by a relay network and made available to the release speed computer when the cut is in the retarder. At the same time the rollability computer is made available to compute the rollability of a following cut. A standage store is provided for each siding. This consists of a potentiometer which produces a voltage proportional to the amount of free space left in the siding. The position of the potentiometer is corrected before humping of a train commences by reference to the state of track circuits in the siding. As wagons enter the siding during humping, the potentiometer is stepped by an amount corresponding to the length of each cut. The output voltage is thus reduced as the siding fills up. Pre-set potentiometers are used to produce voltages proportional to clearance distance, curvature, etc., for each.

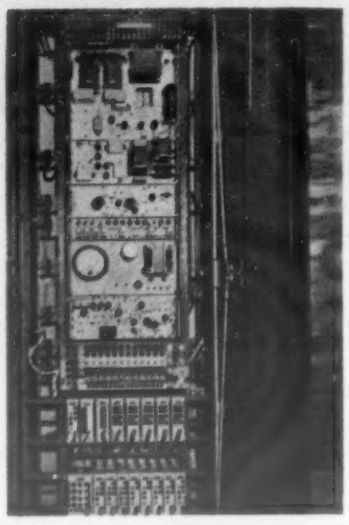
When a cut enters the retarder a relay operated from the route setting the code for that cut selects the voltages representing distance to run and curvature, etc., for the siding to which it is routed, and applies them, together with the rollability measurement, to the inputs of an electronic computer. The output of the computer is a voltage representing the required exit speed from the retarder. Provision is made on the panel for modifying the computed release speeds slightly in order to cover the effect of a strong adverse or following wind. Radar equipment is provided at each retarder to measure the actual speed of a cut, using the Doppler effect. An ultra-high-frequency signal is radiated in a narrow beam from an aerial in the centre of the track towards oncoming wagons and the reflected portion of the beam is picked up by the same aerial. If the wagon is approaching the aerial the reflected signal is of higher frequency than the transmitted signal, and the difference in frequency is used to provide a voltage representing speed.

Weight Detectors

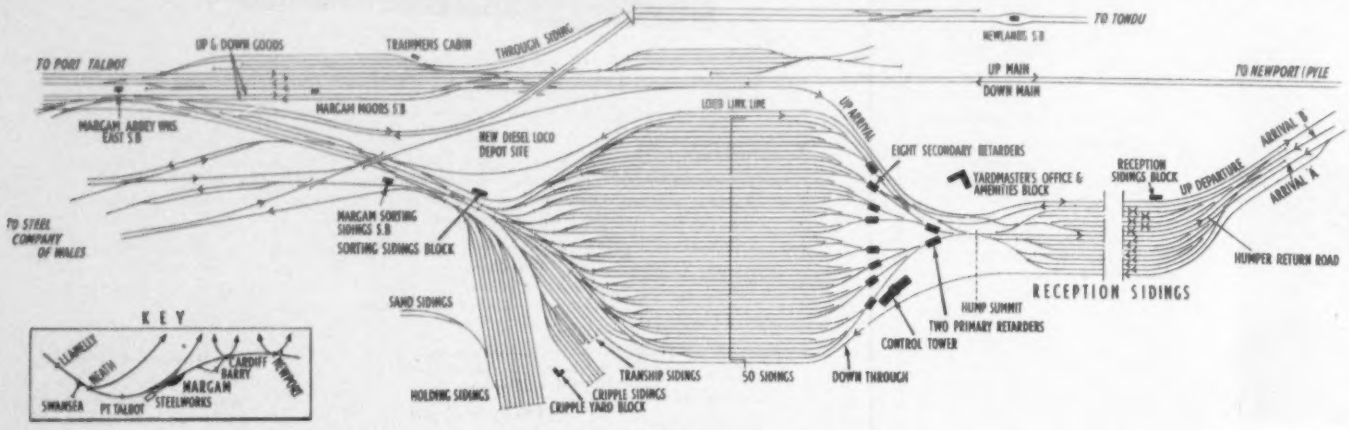
A greater braking effort is required for a loaded wagon than for a lighter wagon and so that the initial braking effort applied by the retarders can be varied, a weight detector is provided a short distance in front of each primary retarder. This consists of a group of micro-switches mounted in a short length of slotted rail. The information from these detectors is used to control the primary retarders and is then passed to the appropriate secondary retarder along with the destination code used for point setting. As the braking is slightly less effective in wet weather, provision is made on the panel for obtaining a slightly greater initial pressure under such conditions. The voltages representing measured speed (from the radar equipment) and required exit speed, together with the information from the weight detector, are then fed to the pressure computer. The voltage output of this unit defines the pressure required in the retarder cylinders to remove the excess energy from the cut.

As the difference between the actual speed of the cut and the required exit speed falls the pressure demanded by the computer also falls, becoming zero when the difference is reduced to zero. The output of the pressure computer is fed to the retarder control servo-mechanism, which compares this signal with that from a pressure transducer mounted on the retarder air manifold, and operates the inlet and exhaust air valves so as to maintain the pressure in the cylinders equal to that demanded. Primary retarders are controlled in a similar manner to the secondary retarders, except that distance to run is not involved at this stage, and the exit speed is, therefore, largely dependent upon the rollability of the cut, being designed to ensure that the space between successive cuts is maintained, and that the cuts arrive at the secondary retarder at a speed within the capacity of it to control.

(*To be continued*)



Electronic equipment for one retarder



Layout of Margam marshalling yard at Port Talbot

humping of a train commences by reference to the state of track circuits in the siding. As wagons enter the siding during humping, the potentiometer is stepped by an amount corresponding to the length of each cut. The output voltage is thus reduced as the siding fills up. Pre-set potentiometers are used to produce voltages proportional to clearance distance, curvature, etc., for each.

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(*To be continued*)

MECHANICAL HANDLING

(*Continued from page 5*)

provide improved vision for the driver and double-acting lifting cylinders which permit the maximum utilisation of both hydraulic and tractive forces when digging-in. Bucket outreach from front grill or tyres is 7 ft. The power unit is the Leyland UE350 105-b.h.p. engine, coupled to an Allison fully automatic planetary transmission.

Roller-type masts with reduced overlay, thus giving greater lift height without increase of collapsed height, are seen on the **Coventry-Climax** stand, on which there are new electric and diesel trucks of from 5,000 to 7,000 lb. capacity. The **Wessex Industries** stand bears witness to the extraordinary versatility of the output of this manufacturer—hand trucks and trailers to fork trucks—and to these have recently been added a four-seat electric personnel carrier, which is being used in the Ford plant at Dagenham.

Cargon Load System

The Cargon freighting system, a product of the Fisher and Ludlow organisation, is being demonstrated in its latest form on the West Brompton forecourt. As recently reported in our columns, Fisher and Ludlow has itself evolved and installed in a German vessel the first of its new car-loading **Carflow** system, using prefabricated deck units. Further contracts have been secured. The range of **Fourways** conveyors has been extended with a portable swan-neck model which gives greater handling and loading facilities.

Loaders and Dumpers

Three new **Muir-Hill** hydraulic loaders are announced. Common to all are a 50-deg. roll-back bucket action—which cuts out spillage—and a "pry-out" force of 7,400 lb. for faster operation. These models are respectively of front-wheel, rear-wheel, and all-wheel drive type. The front-wheel drive FD2 gives a good performance in sand because its backing-out performance is better. Double-acting rams exert the downward pressure of 7,400 lb. referred to which is so useful when digging into hard material. The Powell Duffryn Engineering Co., Limited, is exhibiting for the first time the **Dempster-Dumpster** system, of U.S. origin, and now to be manufactured here under licence. This is a system of interchangeable containers for use with adapted commercial vehicle chassis-cabs.

The **Rapier** 1520 mobile crane is a newcomer available with jibs of from 30 ft. to 80 ft. in length. It has a working capacity of 15 tons at 10 ft. radius propped and a lifting height of up to 30 ft. The turning circle of this diesel-electric crane is 21 ft. 6 in. On the Steels Engineering stand there are a new **Coles** wide chassis mobile crane designed to lift 12½ tons at 10-ft. radius and a six-wheeled lorry-mounted crane lifting 20 tons at the same radius. The six-wheeled Endurance model derives its power from a Perkins 203 engine. The associated **Taylor Jumbo** range is augmented by a newcomer. Already described in our columns, but exhibited for the first time at Earls Court, are the **Jones** KL12-20M and KL10-10 Mark III mobile cranes, the former being one of the three 20-ton units now available, the latter the fast-travel version of the earlier 10-ton model. The HIAB 2-ton lorry loading boom is exhibited by the George Cohen company.

TYER

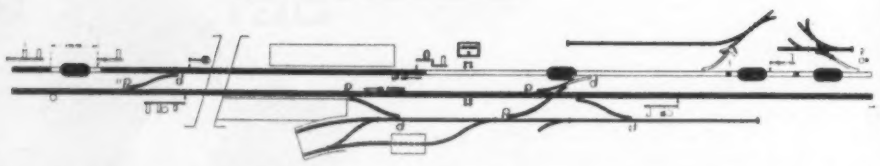
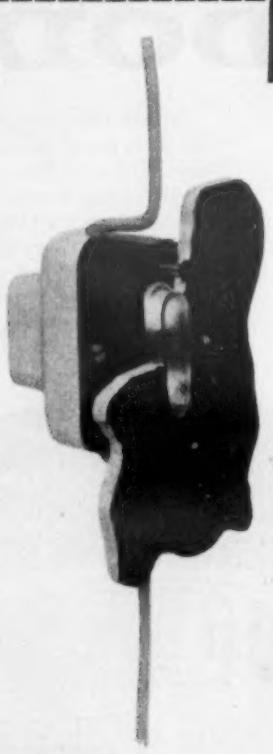


DIAGRAM LAMP UNIT



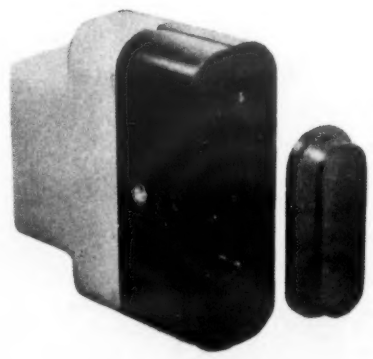
The Unit consists of:

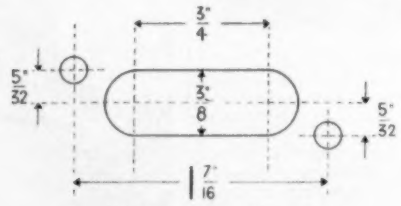
i) A translucent indicating cap usually white or red, to suit the diagram or control panel.
When fitted to a $\frac{3}{16}$" thick panel the front surface of the cap is flush with the diagram.

ii) Two identical shaped base mouldings, clamped by a 6 B.A. screw and nut.

iii) Two identical nickel silver contact springs, trapped between the two mouldings. These make contact with two P.O. type lamps.

iv) The back cover encloses the rear of the clamped base unit, is readily removable without disturbing member units or wiring.





Panel drilling viewed from front.

Type P.5/1
standard unit with 6 B.A. c/sk screw and nut.

Type P.5/2
the unit with 6 B.A. Ch/Hd. screw and special tapped insert for panel.

Notes:
i) Colour of indicating cap to be specified.
ii) P.O. type lamps are separate to the unit.
iii) Alternative cap designs and colours are available

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SOCIAL AND PERSONAL

Scottish Region Traffic Organisation

THE Scottish Area Board of the British Transport Commission announces that the scheme to decentralise departmental traffic management from regional headquarters to a new divisional management level, details of which were given last year, was brought into effect on May 2. Under this scheme the railways in Scotland are divided into three divisions under the charge of traffic managers located at Glasgow, Edinburgh and Inverness, who co-ordinate all commercial, operating and motive power activities. The British Railways district officers, whose functions are not altered, are responsible to their traffic manager and the existing headquarters offices of the chief commercial manager, chief operating superintendent and motive power superintendent are abolished.

The traffic managers, who have a wide measure of responsibility for day-to-day management, are:

Mr. G. L. Nicholson, Glasgow and South West division, comprising the present Glasgow and Ayr districts.
Mr. J. M. Fleming, East Coast division, comprising the present Edinburgh, Dundee and Aberdeen districts.
Mr. H. M. Herbert, Northern division, comprising the present Inverness and Perth districts.

They are responsible to the general manager, Mr. James Ness, on whose behalf the assistant general manager (traffic), Mr. S. E. Raymond, and a small group of specialist officers function.

* * *

The London Midland Region of British Railways announces the following appointments:

Mr. M. C. Purbrick, to be district engineer, Derby North.
Mr. C. L. Parkinson, to be district engineer, Lancaster.
Mr. A. A. Crabb, to be assistant treasurer, Euston.

* * *

Mr. John Lowe has recently been appointed home sales manager of I.T.D., Limited, the industrial truck manufacturer. He joined the company in 1948 as a technical representative in Manchester and London before being promoted last year to northern area sales manager. Mr. Lowe, who was educated at the University College School, Hampstead, was commissioned in the R.A.F. and served for six years during the war. He will be based at the head offices at Hall Green, Birmingham.

Mr. John Lowe

* * *

The International Harvester Co. of Great Britain, Limited, has appointed Mr. Harold E. Norris as manager of domestic sales. He succeeds Mr. H. D. Frymire, who recently became director of sales.

* * *

Appointment of Mr. L. H. Pomeroy as director, marketing, United Kingdom operations, is announced by Massey-Ferguson (United Kingdom), Limited.

* * *

Mr. W. Urquhart has retired as deputy general manager, East African Railways and Harbours, and is succeeded by Mr. G. P. G. Mackay, hitherto chief operating superintendent.

* * *

Mr. W. B. Batty, manager, tractor division, Ford Motor Co., Limited, has made an administrative reorganisation of his division. Mr. N. Macdonald is appointed manager of sales operations, Mr. G. A. Guthrie takes charge of the new marketing office, Mr. A. M. Lasman becomes manager of service operations. Mr. G. R. Piplady becomes manager of the Ford mechanised farming centre. Mr. S. J. Wright remains agricultural adviser to the company.

* * *

We record with regret the death of Lord Glyn, who as Sir Ralph Glyn was well remembered in the transport sphere as a director of the L.M.S.R., an office which he held from 1929 until nationalisation. As M.P. for Abingdon from 1924 until he was created a baron in 1953 he was an informed critic (even of Conservative policy) on transport matters and he became chairman of the select committee on estimates in 1951. He was a director of J. Samuel White and Co., Limited, the shipbuilder. Lord Glyn was 75.

* * *

Mr. E. B. Carter, B.Sc., A.M.I.Mech.E., A.F.R.Ae.S., has been appointed Director of Engine Production, Ministry of Aviation. He was employed in prewar years by the Municipal Technical College, Halifax, and by the Constantine Technical College, Middlesbrough. He entered Government service in 1939, and between then and 1951 held a number of posts as resident technical officer with aeroplane engine manufacturers. In 1951 he entered the Directorate of Engineering Research and Development of the then Ministry of Supply, becoming an Assistant Director in 1955.

* * *

The annual dinner of the Railway Correspondence and Travel Society was held on April 30 with Mr. R. D. Goddard, chairman, presiding. There was an attendance of 90. The toast "British Railways" was proposed by Mr. C. K. Dunkley, and the response was from Mr. T. C. B. Miller, chief mechanical and electrical engineer, Eastern Region, B.R. He gave instances of the salutary effects that reports in *The Railway Observer* (journal of the R.C.T.S.) sometimes had in certain places. Mr. J. N. Maskelyne, A.M.I.Loco.E., past-president of the Stephenson Locomotive Society, proposed the toast "The Railway Correspondence and Travel Society," remarking that his recently ended presidency of the S.L.S. more than spanned the life of the R.C.T.S. He was happy to note that the "air of disdain" with which the R.C.T.S. was greeted in 1928 as an intruder had long passed.

* * *

A one-day conference on transport management is being organised by the British Institute of Management in collaboration with the Institute of Transport at the Royal Festival Hall on May 19. The transport officer of I.C.I., Mr. J. A. McMullen, will be speaking on "Economics of Fleet Provision"; the group transport manager of Reckitt and Colman Holdings, Limited, Mr. L. A. Carey, will discuss "Freight Rates." Mr. H. R. W. Watkins, head of operational research group of Shell-Mex and B.P., Limited, will look at "Some Analytical Methods Applied to Transport Problems" and the managing director, Mr. A. D. Wilson, and supervising consultant, Mr. J. E. Fleming, of a large British firm of consultants, will discuss "Some Steps Towards Better Use of Transport." This conference is for directors and senior executives who are actively concerned with transport and distribution in industry.

Architect to London Transport

WE regret to record the death of Dr. Charles Holden, the eminent architect and sculptor, whose work first attracted notice in the former sphere with his design of the St. James' headquarters of the Underground group of companies, later to pass to London Transport. This was in 1929 and after that he was responsible for the design of several new or rebuilt Underground stations, including Piccadilly Circus, Knightsbridge and, among surface buildings, Sudbury Town, which was adjudged a notable breakaway from the cramping tradition of the times. Dr. Holden would have been 85 on May 12.

* * *

We regret to record the death, at the age of 79, of Mr. James Finlay, former editor and managing director of *Transport World*.

* * *

Mr. Charles E. Chun has been appointed traffic manager of Kinga Bus Services, Limited, Nairobi, and of Rift Valley Transport, Limited, Nakura, with effect from April 2.

* * *

Mr. J. F. Clark, president of A.C.F. Industries, Incorporated, the U.S. automotive and railway rolling stock equipment manufacturer, is visiting Britain at the start of a tour of European capitals for meetings with licensees and manufacturers of the company's products. A year ago A.C.F. (Great Britain), Limited, was established as European representative and British licensee for the American company and its product division.

* * *

Mr. H. C. Hinder, appointed export sales manager, I.T.D., Limited, entered the company upon leaving the Army in 1947. He held the rank of major in the R.A.O.C. in charge of materials handling and depot planning. He was projects and planning branch manager with I.T.D. for nine years and home sales manager for two years before assuming control of the Southern area. He has travelled widely for the company and his new appointment will entail regular visits to distributors throughout the world.

Mr. H. C. Hinder

* * *

The 122nd annual meeting of the British Association for the Advancement of Science will be held in Cardiff from August 31 to September 7, under the presidency of Sir George Thomson, F.R.S.

* * *

A commission to inquire into the economics, administration, and industrial relations of the Nigerian Railway Corporation will commence its sittings at Lagos on May 17. The chairman is Dr. T. O. Elias, of the Institute of Commonwealth Studies, Oxford, and the other members of the commisssion are Sir Arthur Kirby, East African Commissioner in London (former general manager of the East African Railways and Harbours) and Dr. Pius Okigbo, economic adviser to the Eastern Nigeria Government.

* * *

The annual dinner of the Institute of Transport was this year held at the Dorchester Hotel on April 28 in order to coincide with the congress which was being held in London. The president, Mr. R. G. Grout, proposing the toast of the guests, said that both the Institute of Transport and the Ministry of Transport were now forty years old; the Minister, with his team, were possessed of drive, resilience and imagination. Mr. Ernest Marples, replying, touched upon the current perplexities of road, rail and sea transport.

Mr. H. F. Pallant, chief operating officer, British Railways, retired recently and received a cheque on behalf of the members of the senior officers' mess from Mr. D. Murray, assistant traffic adviser (freight)

Sir John Elliot has been elected to the board of the Compagnie Internationale des Wagon-Lits et des Grands Express Européens.

* * *

Lord Radnor, a former director of the Southern Railway Company, and chairman of the Forestry Commission since 1952, has been created Knight of the Garter.

* * *

Mr. R. K. Cope, who is deputy traffic manager, Birmingham and Midland Motor Omnibus Co., Limited, has been appointed chairman of the management committee of Associated Motorways. He succeeds Mr. Edmund Phillips, who relinquished the office upon retiring as general manager of Red and White Services, Limited.

* * *

The 53rd Crewe dinner of the Crewe Pupils and Apprentices Association was held in London at Whitehall Court on April 29 when Sir Reginald Terrell presided. The toast of "Past and Present Crewe Men" was proposed by Mr. Gerald Collingwood, chairman of the Locomotive and Allied Manufacturers Association. The replies were by Messrs. F. J. Hookham for past Crewe men and A. J. Marsden for present ones. The chairman proposed "The Guests," to which Mr. R. A. Smeddle, president of the Institution of Locomotive Engineers, replied and an evening of nostalgia concluded with the chairman proposing the health of the hon. secretary of the Association, Mr. F. B. Roberts. The hard work which he had put into the revival of the function was betokened by the fact that the attendance at the dinner of some 70 members and guests represented a 75 per cent increase on the figure for the previous year.

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IMPORTANT CONTRACTS

Dunlop—Oldham Australian Company

IT is announced by Dunlop Rubber Australia, Limited, and Oldham and Son, Limited, Manchester, England, that a jointly-owned sales company is to be set up in Australia under the title of Dunlop Oldham Pty., Limited. The new company will market the Oldham pg double-sleeve tubular traction and other industrial batteries throughout Australia. Pg batteries will be manufactured at Artarmon, Sydney, N.S.W., where the Oldham company has installed plant and equipment to provide complete manufacturing and technical service. The new set-up provides for close liaison and co-operation between the two companies in manufacture. Distribution and service is based on the widespread Dunlop sales organisation throughout Australia.

Eastern Region Contracts

The Eastern Region of British Railways announces the following contracts:

W. and C. French, Limited, Buckhurst Hill, for reconstruction of second portion of overbridge at Rainham Road South, Dagenham East Station and construction of extensions to up and down platforms, provision of fences and drainage at Bush Hill Park, Stamford Hill and Rectory Road stations.

Leonard Fairclough (London), Limited, London, N.W.5, for reconstruction of bridge over River Gipping between Claydon and Needham.

Wellerman Bros., Limited, Sheffield, 3, for roof repairs to locomotive shed at Frodingham motive power depot.

Hong Kong Buys Albion

Good performance by a bus shipped out to Hong Kong for demonstration purposes has helped Albion Motors, Limited, to net an order for 100 buses from the Kowloon Motor Bus Co. (1933), Limited. The order is for 100 Albion Victor bus chassis powered by 94-h.p. Leyland O350 diesel engines, with a wheelbase of 17 ft. 3 in. providing space for a 41-seat body.

Second Bristol Siddeley Engine for Italy

Bristol Siddeley Engines, Limited, announces the conclusion of a licence agreement with Piaggio and C., Genoa, for the manufacture and sale in Italy of the Viper 11 2,500 lb.s.t. turbojet. This is the second agreement of the kind concluded by Bristol Siddeley with an Italian manufacturer—the Orpheus turbojet is already in production by Fiat.

Gnome-Whirlwind Helicopter Ordered

A substantial order for the turbine-engined Westland Whirlwind helicopter has been placed by the Ministry of Aviation. Known as the Whirlwind Mk. 10, it is powered by a single de Havilland Gnome 1,000-s.h.p. turboshaft unit. The order, placed on behalf of the Royal Air Force, is for a "large number" of new aircraft and also covers a programme to re-engine Whirlwind helicopters already in service.

Three More Vanguards for Canada

Trans-Canada Air Lines has announced its intention of buying three more Vickers Vanguard turboprop air liners. T.C.A. already has 20 Vanguards on order and the first of these is now being prepared for test in the new flight shed which has just been completed at Weybridge. Powered by four Rolls-Royce Tyne turboprop engines, the Vanguard can carry about 100 passengers and 10 tons of freight on medium-range routes at 420 m.p.h.

Guy Orders 500 A.E.C. Diesels

A.E.C., Limited, has concluded a contract with Guy Motors, Limited, for the supply of 500 diesel engines and gearboxes for installation in the Guy range of vehicles. The engine is the A.E.C. AVU470C vertical six-cylinder unit of 470 cu. in. (7,685 c.c.). It is normally available in three standard ratings developing 103 b.h.p. at 1,800 r.p.m., 112 b.h.p. at 2,000 r.p.m. and 125 b.h.p. at 2,200 r.p.m., and Guy Motors will have 300 of the 112-b.h.p. and 200 of the 125-b.h.p. units.

Finland Orders More Leyland Diesels

A second order for 600 diesel engines has just been received from Finland by the industrial units division of Leyland Motors, Limited, bringing the total number of Leyland engines ordered by Finland within the past three weeks to 1,200—valued at over £500,000. Placed by the largest producer of commercial vehicles in Finland, Oy Suomen Autoteollisuus A.B., the new order calls for 400 O375, 100 O600 and 100 O680 diesels. All will be equipped with C.A.V. fuel-injection and electrical equipment.

Germans Order Perkins Engines

A £35,000 order for four-cylinder diesel engines for use in U.S.-designed German-built fork-lift trucks has been placed by a German firm with Perkins Engines, Limited. The engines—the Perkins Four 203 rated at 55 b.h.p. at 2,200 r.p.m.—are to be fitted in Clarklift 2½- and 3½-ton fork-lift trucks manufactured by Ruhr Itrans Hubstapler G.m.B.H., Mulheim, examples of which are being exhibited at the Hanover Fair, where there is also much additional industrial equipment of German, Finnish, French and Dutch origin fitted with Perkins engines.

Demand for Lolines

A number of operators have placed orders for Dennis Lolines mostly of the Series II single-stop forward-entrance type. They include Barton Transport, Limited, for one with Northern Counties body and Leyland O600 engine, City of Oxford Motor Services, Limited, for five East Lancashire-bodied units with A.E.C. AVU470 engines and a repeat order from Walsall Corporation. The last will have a Willowbrook body and Gardner 6LW engine. East Lancashire will build the bodies for 21 Loline IIs for Aldershot and District and these too will have 6LW power units.

North Eastern Region Contracts

The North Eastern Region of British Railways announces the following contracts:

Pethow, Limited, Sandwich, for a diesel-alternator standby set at Morpeth Station for colour-light signalling between Newcastle and Berwick.

Landis Lund, Limited, Keighley, for a cylindrical grinder for the York carriage and wagon works.

Dowsett Engineering Construction, Limited, Gateshead, for building two bridges in connection with a new marshalling yard at Lamesley.

G.W.S. Burdett and Co., Limited, Peterborough, for a surface grinder for the York carriage works.

Wakefield-Dick Industrial Oils, Limited, London, N.W.1, for fuelling facilities for diesel railcars at Manningham motive power depot.

Geo. Cohen Sons and Co., Limited, London, for a 3-ton mobile crane for the chief civil engineer's department at York.

Thermit Welding (Great Britain), Limited, Rainham, for four sets of welding equipment at the chief civil engineer's department, York.

Enfield-Standard Power Cables, Limited, Enfield, for electric cabling and switchgear at Tweedmouth Station for colour-light signalling between Newcastle and Berwick.

Robt. Jenkins and Co., Limited, Rotherham, for nine 10,000-gal. tanks for oil storage at York motive power depot.

SHIPPING AND SHIPBUILDING

P. and O.—Orient Amalgamation

AS a result of the integration of the Orient Line with the P. and O. Steam Navigation Company, certain changes in the organisation of P. and O. took place from May 1. The P. and O. and Orient companies will continue to own their respective ships, which will retain their distinctive colours and markings. They will, however, hand over the management and operation of the ships to two new companies; P. and O.—Orient Management, Limited, P. and O.—Orient Lines Passenger Services, Limited. The service offered to the public by the P. and O. and Orient fleets will be sold under the name "P. and O.—Orient Lines" and this will apply in all passenger trades. The parent company, the Peninsular and Oriental Steam Navigation Company, will now for the most part confine itself to its group responsibilities. It will, however, also provide certain central services. The P. and O. Steam Navigation Company and Orient Steam Navigation Company respectively will continue to be the direct employers of their existing seagoing personnel. Sir Donald Anderson is chairman of both the new P. and O.—Orient companies as also of Peninsular and Oriental Steam Navigation.

O.E.E.C. Review of Shipping

IN spite of the general increase in world trade in 1959, the tramp freight market has remained depressed owing to the enormous surplus of tonnage. Over 5 million gross register tons of tramps and a similar amount of tankers were laid up at the end of the year. Conditions in the liner trades are better although increasing operating costs have affected profits. World fleets are being heavily increased as a result of orders placed over the last few years, but owing to the excess tonnage position and to present conditions on the freight market, new orders in the shipyards are now falling off considerably. These are the main points which emerge from the eighth annual report of O.E.E.C. on maritime transport, covering developments in this sector during 1959.

Flagship of French Line

ON May 11 Madame de Gaulle, wife of the French president, will perform the naming and launching ceremony of the liner *France*, being built at a cost of approximately £27 million for the Havre—Southampton—New York service of the French Line. The largest passenger ship ever launched in France, she will leave the slipway of the Chantiers de l'Atlantique at St. Nazaire on the Loire. The main characteristics of the *France* are: Length, 1,035 ft.; breadth 110 ft.; power 160,000 h.p.; displacement tonnage 55,000; estimated gross tonnage 60,000; and service speed 31 knots. The liner will have accommodation for 2,000 passengers, 500 in first class and 1,500 in tourist class. She will be offering an annual total of 92,000 berths, in excess of the combined total provided for by the *Liberté* and *Ile de France*, when she is completed early in 1962.

Welding, except for a few longitudinal joints, has replaced the riveting and a reduction of some 15,000 tons was possible compared with the displacement tonnage of the *Normandie* by this means and by the extensive use of light alloys throughout the superstructure.

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FINANCIAL RESULTS

NOTES on the trading results, dividends and financial provisions of companies associated with the transport industry are contained in this feature, together with details of share issues, acquisitions and company formations or reorganisations.

Birmingham and Midland Motor Omnibus

A net profit of £414,256 (£409,591) after tax and depreciation was earned by the Birmingham and Midland Motor Omnibus Co., Limited, for 1959. Final dividend is 6 per cent, making 10 per cent (same).

B.E.T. Omnibus Services

Owing to a typographical error, the net profit of B.E.T. Omnibus Services, Limited, for the year 1958-59 was shown last week as £558,297 instead of £446,297, which means that the net profit, £513,809, for the year ended March 31, 1960, was an improvement on the previous year, not a decline.

Bristol Aeroplane

The Bristol Aeroplane Co., Limited, will distribute a final dividend for 1959 of 7½ per cent on the ordinary stock, making, with the interim of 3½ per cent a total of 11 per cent for the year (10 per cent). The net profit shown in the consolidated profit and loss account amounts to £893,000 (£614,000) after taxation £846,000 (£626,000).

Chloride Electrical Storage

The Chloride Electrical Storage Co., Limited, reports a net profit for 1959 of £1,473,287 (£899,009) after United Kingdom taxation £869,057 (£799,754) and other taxation £382,469 (£338,319). In addition to the interim dividends of 2½ per cent on the A and B ordinary in May, 1959, and 5 per cent in October on those stocks, as increased by the bonus issue, a final of 12½ per cent is now being paid.

Dunlop Rubber

Group net profit for the year 1959 was £7,169,000 (£5,797,000), the Dunlop Rubber Co., Limited, announces. This was after taxation and depreciation. Dividend for the year is 1s. 6d. per ordinary stock unit. Group sales were a new record at £261 million, an increase of 7 per cent. Trading results for the second half of the year exceeded expectations and helped to make the group profit also a record one. Rising natural rubber prices during the year caused the consumption of synthetic rubber by the group to rise from 36 to 39 per cent of the whole. Retreading companies continue to increase their use of synthetic. A separate brake division has been formed at Coventry to concentrate on development and marketing of these items. The level of profits throughout the transport group was only slightly up on the year.

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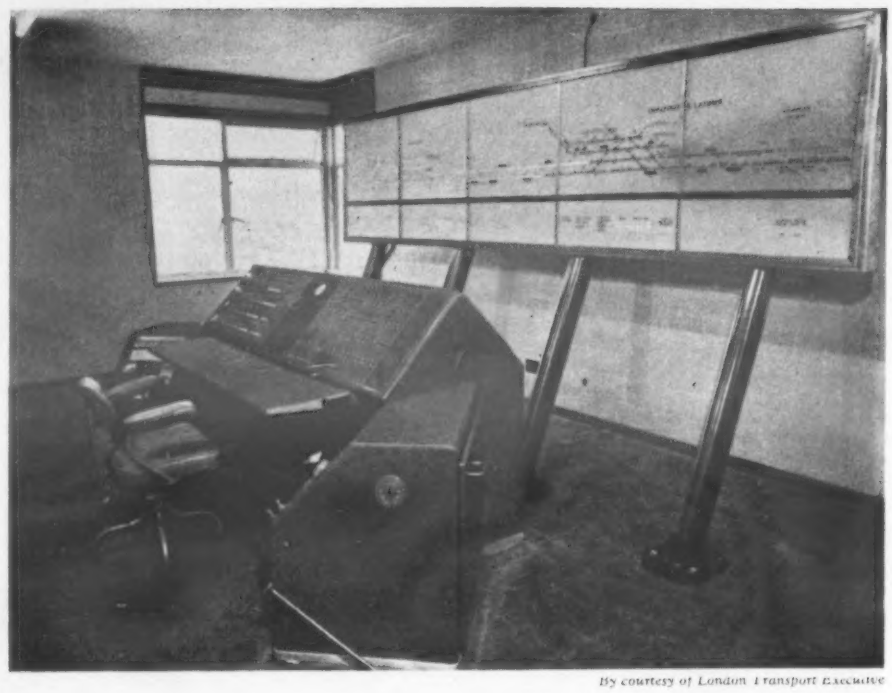
NYLON IN INDUSTRY

London Convention

A REVIEW of the role now played by nylon in industry will be presented by British Nylon Spinners, Limited, at an industrial convention to be held at Park Lane House, London, on May 25 and 26. Technical papers will be given on a number of subjects of general interest and there will be an exhibition of articles for which nylon is being used, ranging from a 100-ft. long Dracone to a tiny surgical suture; several completely new developments not shown publicly before will be included.

In one form or another nylon serves almost every industry. It goes into conveyor belting, tyres for all types of vehicles, fishing nets, proofed covers of many kinds, inflatable buildings and collapsible tanks for transporting and storing liquids. It goes into felts for the paper-making industry, into ropes for the shipping industry, into press cloths for laundries, into ventilation ducting for mines and is used for fire hose, dunnage bags, flags, safety harness, loading nets, filter cloths and protective clothing.

New Signalling at AMERSHAM



By courtesy of London Transport Executive

Amersham Station on the Metropolitan Line of London Transport will become the terminus of Metropolitan Line train service when the electrification scheme from Rickmansworth to Amersham and Chesham and track quadrupling from Harrow to Watford South Junction are completed, and new signalling at Amersham has been brought into operation to deal with mixed suburban and main line traffic.

WESTINGHOUSE

SIGNALLING

was supplied and it was designed and installed under the direction of Mr. R. Dell, Signal Engineer, London Transport.

The control desk has 2 push button panels; the left hand one controls the Amersham signalling, and the right hand one, when equipped, will control the signalling at Chalfont and Latimer.

Westinghouse Brake and Signal Co. Ltd., 82 York Way, London, N.1

Saxby & Farmer (India) Private Ltd., Calcutta
McKenzie & Holland (Australia) Pty., Ltd., Melbourne
Westinghouse Brake & Signal Co. S.A. (Pty.) Ltd., Johannesburg
Agents:—Bellamy & Lambie, Johannesburg

OFFICIAL NOTICE

SCOTTISH OMNIBUSES GROUP
REQUIRE
TWO ASSISTANT ENGINEERS

1. For Scottish Omnibuses, Limited, Edinburgh (800 vehicles). Applicants should be below 45 years of age, have served a recognised apprenticeship in automobile engineering and possess qualifications at least to the Higher National Certificate standard.

A sound knowledge of engineering practice and of the maintenance of public service vehicles, together with experience in the control and direction of workshop personnel are essential. Applicant must be prepared to reside in Edinburgh. Endorse application S.A.E.

2. For Central S.M.T. Co., Limited, Motherwell (600 vehicles). Qualifications as above. Applicant must be prepared to reside in Motherwell. Endorse application C.A.E.

Applications, which will be treated as confidential, should give full details of education, training, qualifications, experience, present position and salary and addressed, to arrive not later than June 1, to:

The Group Staff Officer,
Scottish Omnibuses Group,
New Street,
Edinburgh, 8.

CLASSIFIED ADVERTISEMENTS

CLASSIFIED ADVERTISEMENTS should be addressed to THE MANAGER, Classified Advertisements, MODERN TRANSPORT, Russell Court, 3-16 Woburn Place, London, W.C.1.

RATES.—The minimum charge for classified advertisements is 7s. for 14 words or less, and 6d. for each additional word. The name and address of the advertiser is charged at the same rate. If a box number is used 2s. extra is charged to cover our name and address and postage. If set in paragraph form each paragraph is estimated separately. Official Notices and semi-display in the classified columns are charged at the rate of 48s. per single column inch.

SITUATIONS VACANT

DRAUGHTSMAN required for work in connection with Public Passenger Transport vehicles—body design. National Certificate standard and completed National Service training. Canteen facilities, free travel to and from duty on company's vehicles and other travel concessions. Apply in writing, giving particulars of age, salary required, experience, etc., to the Staff Department, Birmingham and Midland Motor Omnibus Co., Limited, 571 Bearwood Road, Smethwick, 41, Staffs.

TRANSPORT REPRESENTATIVE required by well-known and well-established transport company in London, who must possess a full knowledge of day-by-day freight movement and C-contract hire. Only first-class travellers need apply. Write Borough and Worth (Contracts), Limited, The Depot, Croydon Road, Elmers End, Beckenham, Kent.

SILVER ROADWAYS LTD.

Reliable Trunk Services to all Parts

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BRISTOL 22315

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LLANELLY
Morfa Works, Llanelly
LLANELLY 4302

LONDON
22-24 Bermondsey Wall West S.E.16
BERmondsey 4533

CARDIFF
10 Dumfries Place
CARDIFF 21631

SWANSEA
Exchange Buildings
SWANSEA 54171/5

GLASGOW
12 Dixon Street, C.2
CITY 3381

LIVERPOOL
11 Old Hall Street, Liverpool, 3
CENTRAL 6386

NOTTINGHAM
Pavilion Building, Pavilion Road, West Bridgford
NOTTINGHAM 83481

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